AMERICAN GAS JOURNAL

JANUARY, 1940

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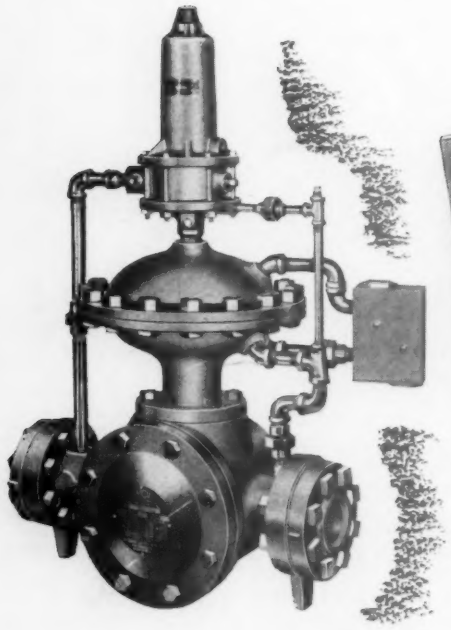

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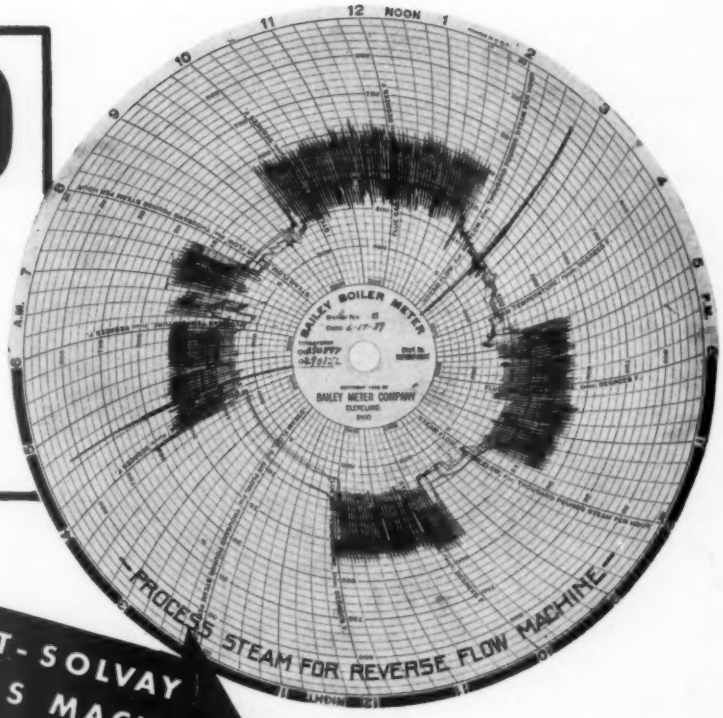

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Oil per M C F, 4.85 gal. Heavy Bunker C	
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Oil per M C F, 4.85 gal. Heavy Bunker C	
Tar Removed per M C F*	1.172 gal.
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*Tar figured at 32% of enriching oil.
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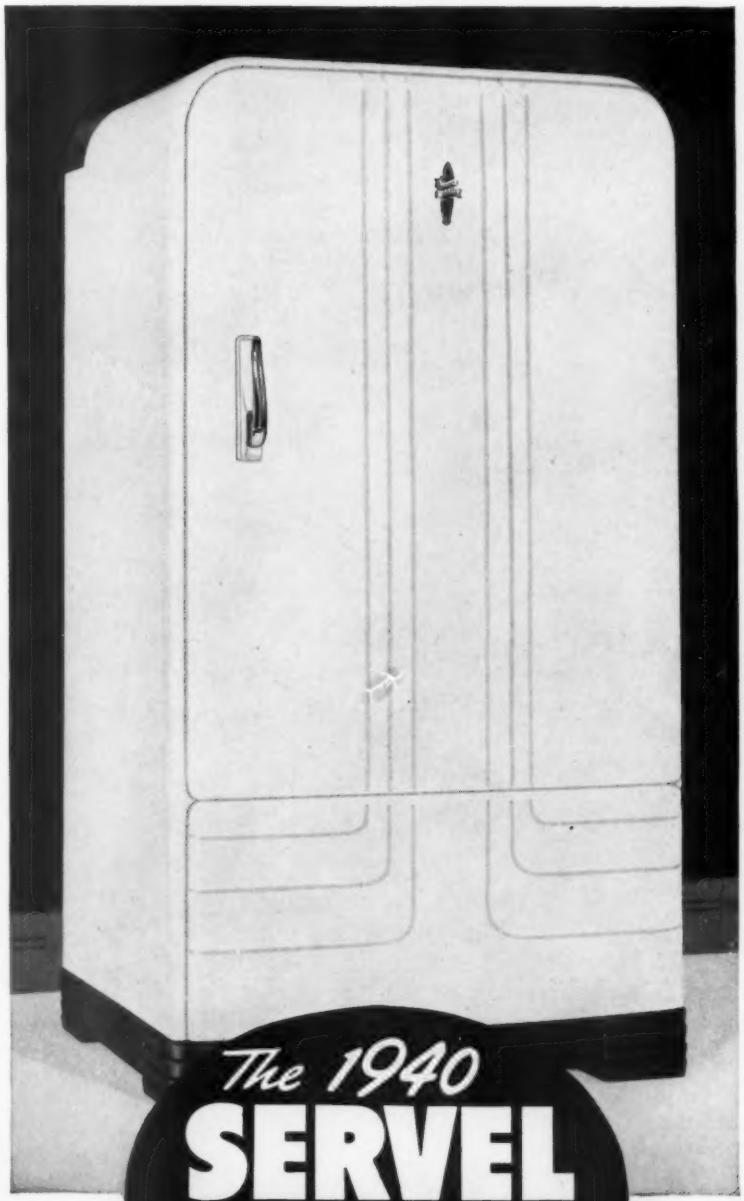

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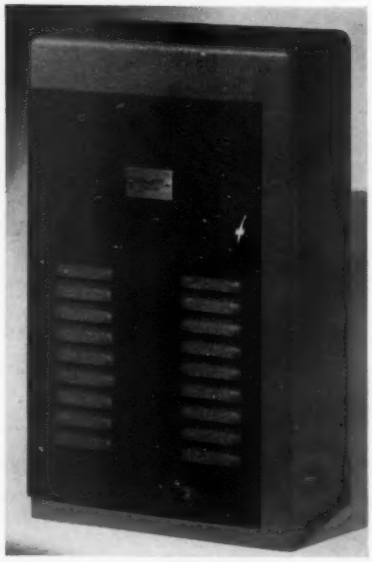

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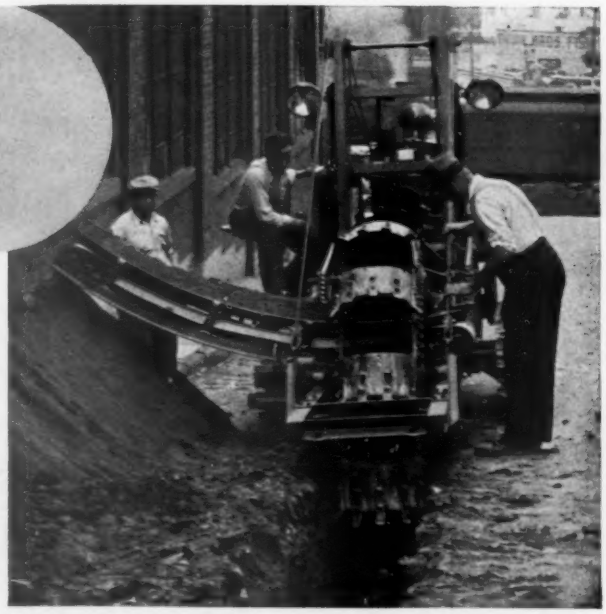

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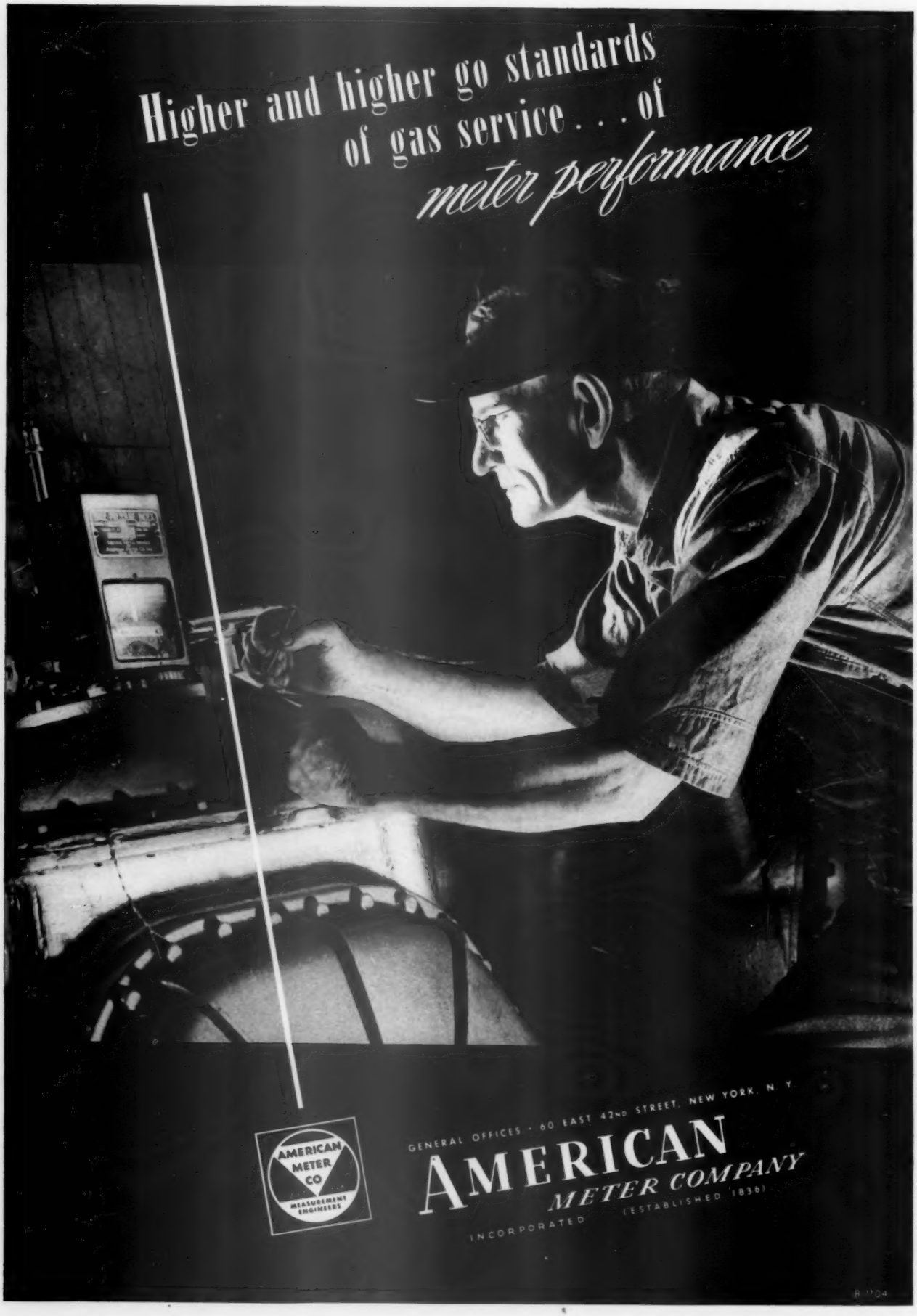
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1940

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No. 1

Purging and Dismantling of the Ardmore, Pennsylvania, Gas Storage Holder

By
George F. Tyler
Gas Engineer, Philadelphia Electric Company
Philadelphia, Pa.

THE recently dismantled Ardmore, Pennsylvania, Gas Storage Holder, of the Philadelphia Electric Company, which was erected in 1905, had a capacity of 500,000 cubic feet. It was of three lift construction, and the tank contained approximately 1,500,000 gallons of water. It was equipped with three 20-inch stand-pipes. At the time it was put in service, all the gas used in Ardmore was produced in the local water gas plant, and distributed at low pressure from the holder.

Later, the intermediate pressure system was supplied by the Ardmore pushers which pumped gas from the holder. Starting in 1920, however, gas was supplied from West Conshohocken, and the Ardmore water gas equipment shut down. A governor admitted gas to the holder, from which it continued to be distributed at low and intermediate pressures.

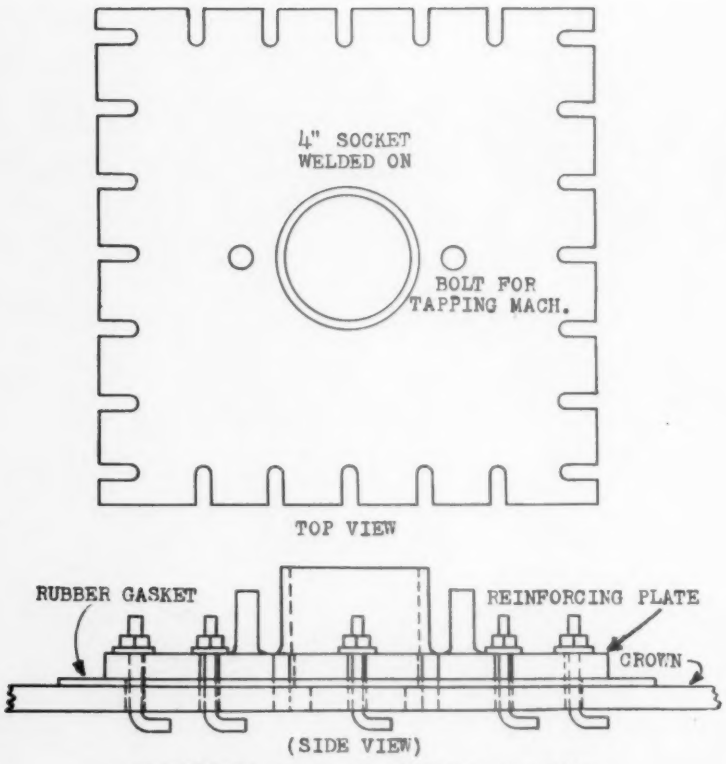
In 1923, the governor station was redesigned to feed the low pressure mains from the intermediate pressure lines which were now pumped from West Conshohocken, leaving the holder floating on the line. In 1932, the two lower lifts were grounded, and in 1937, when the pushers were removed, the holder drips and connections were flooded, but the holder was retained as a reserve supply that could readily be made available in an emergency. By 1938, the loads had increased to such an extent that the entire capacity of the holder would have represented only a small portion of the sendout on a winter day. An authorization for the retirement of the holder and boiler plant and simplification of the main system was approved in December, 1938.

Early stage of dismantling — Erected on Holder Crown is 90-ft. scaffolding structure, which was moved from column to column as dismantling proceeded.

Procedures were prepared for this work which was scheduled for the following spring. However, during the last week of February, a leak occurred in the holder, and several thousand cubic feet of gas was lost. A two-inch line was immediately run up the side and fastened to one of the crown taps by means of flexible tubing, and the holder raised several feet. This method of restoring pressure was quicker than pumping the drip on one of the holder connections and operating the 20-inch valve. The emergency connection to the crown was kept in place until preparations for purging were completed. In view of this occurrence, steps were taken to carry out the purging immediately. In the meantime, the leak had been found near the center of the crown where a seam had been opened up for a little more than one inch, apparently by a crowbar, used for removing ice. The leak was caulked with lead wool.

Purging Operation

The purging operation was divided into two parts, the first providing for cutting the two connections on the street side of the holder valves, and the second, for the purging of the holder itself. Since a means of supplying gas to the holder in case of emergency had been provided, it was now possible to cut the two remaining connections (the third had been cut in 1937 when the pushers were removed). This was done by removing the water from the mains until only the drips remained flooded to seal the holder. A 6-foot length of 20-inch main, which had previously been purged out with CO_2, was removed from each holder connection,



REINFORCING PLATE IN POSITION ON CROWN
SHOWING SOME "L" BOLTS IN PLACE
THICKNESS OF PLATE AND CROWN EXAGGERATED

a small constant flow of CO_2 being maintained through the section being cut from the instant it was bagged off until it was removed. The atmosphere in the mains had been tested previously, and since it showed a low oxygen content, it was unnecessary to purge them back to the plant yard before cutting. The open ends on both sides of the cuts were fitted with Dresser test heads, and the holder drips flooded to the top again.

The next step was to provide the necessary vents in the holder crown and lifts. There was a 1-inch tap in the cover of the manhole over each standpipe, but none at the center of the crown. The thickness of the crown sheets (nominally ¼-inch) was considered insufficient to permit threading them or welding on a reinforcing plate. A steel plate was fitted with a 4-inch pipe socket, rubber gasket, and lugs for the tapping machine. This plate was bolted to the center of the crown, in which a 3-inch hole was then tapped. A short nipple and 4-inch valve were screwed into the socket. Four ¾-inch taps were made around the tops of the second and third lifts to permit purging out the gas trapped there in the annular cup spaces over the tank water. Just before purging was begun, seven ¾-inch holes were drilled in the crown near the periphery. To detect any oil on the surface of the tank water, a glass tube was lowered through the taps over the standpipes and in the center of the crown, and samples taken. A large quantity of water was also pumped out through the holder skimmer line. None of these tests indicated more than a trace of oil. For a further check, a skimmer was made up to fit through the 3-inch center tap and permit taking a larger sample. Had oil in any great quantity been discovered, it was planned to remove it with this skimmer before purging was begun. When several samples were taken, however, only slight traces of oil were found.

Despite the negative results of these tests, it was determined that steam as well as inert gas would be all vents were opened, the valve in used in the purging, the steam to be admitted together with the inert gas.

Laboratory Tests

Water taken from the top and bottom of the tank outside the lifts was submitted to the Chemical Laboratory to determine whether it could be safely run into the storm sewer system. Their report was favorable. Orsat analyses of gas from the holder showed less than 2 per cent oxygen; and combustible indicator tests showed practically 100 per cent combustible gas, so that it was determined to use no screens on the purge vents. Had results indicated high oxygen content, screened vents would have been used to eliminate the possibility of "flash-backs."

Power Service and Pipe Lines

To provide power for the Harrison electric motor-driven purging machine, which had been set up about 75 feet from the holder, a 25 K.V.A. 3-phase transformer was mounted on a pole adjacent to the holder site, and a temporary 220-volt service run to the machine. A two-inch line was run from a nearby fire plug to provide cooling water, and a water connection provided for the portable boiler located a short distance from the purging machine. A four-inch inert gas line from the purging machine, and a two-inch steam line from the boiler were run to a point near the four-inch tap in the connection to standpipe No. 1, the inert line connected to the side outlet and the steam line to one through outlet of a four-inch tee to provide a slight injector effect. A filler piece was provided to connect the other through outlet of the tee to the tap, but was left out for the time being. A 4-inch drain line was run from the purging machine to the holder pit, the water being pumped from the pit and run into the storm sewer. A screen was fitted to the boiler stack to act as a spark arrester. Steam coal was obtained locally.

The holder now contained approximately 60,000 cubic feet of gas, some having been added through the temporary connection to provide for any leakage while making the new taps. About 25 MCF of this was burned in the Harrison machine to test its operation. The holder crown rim was now about four feet above water level. The gas line to the inert machine was then connected to the street side of the cut in the connection to No. 1 standpipe, in readiness for purging.

Procedure

All preparations having been completed, on the morning of March 9 the filler piece was inserted between the inert gas and steam lines and the holder connection, and the pumping of the holder drip on this line begun. In the meantime, the inert machine and boiler had been put in operation, the inert gas and steam being vented at the ends of their respective lines just before the tee. The valves which would later admit them to the holder were still closed. Orsat analyses of the inert gas were commenced and continued at frequent intervals throughout the entire purging procedure.

Standard purge pipes were now in-

Left: Lowering lift section to tank floor—At left against the tank wall is another lift section. Right: Holder Pit after removal of Tank.

stalled at the center crown tap and at the three one-inch peripheral taps, and these vents opened to release some gas and allow the holder to fall. A U-gauge was connected to the crown to permit checking the pressure. When the crown rim had fallen to about one foot above the tank water level and a final check had been made on the inert gas, the crown vents were closed and the drip having now been pumped, inert gas was admitted. The time was 12:20 p. m. Shortly after, steam was let into the holder. During the ensuing hour, the lift rose several feet and all vents were opened, the valve in the center vent now being operated to hold the lift a few feet above its landed position.

The drips in the other two holder connections were now pumped, in each case bottled CO_2 being supplied through a tap in the drip head to take the place of the water removed until the water level was lowered sufficiently to permit gas from the holder to flow out. Standard vents were installed on these two connections and purging continued through all vents. The boiler was operated at its full available capacity to maintain the highest possible temperature in the holder. By 4:00 p. m., Orsat and combustible indicator analyses at all vents indicated complete purging. All tests were run in triplicate.

The holder was lowered by opening fully all vents and shutting off steam and inerts. The boiler was shut down, but the inert machine kept running to permit refilling the holder in case of emergency. The manhole plates over the standpipes were removed and eight 5 feet by 3 feet holes cut in the crown (six around the periphery in the second row of sheets, and two near the center). The inert machine was shut down as these openings were being made.

A brief inspection now revealed some oil on the tank water. This did not cover the entire surface, but had collected in pools, none of which was located where samples had been taken. The wooden crown support structure appeared intact, and it and the interior of the plates were covered with an oily deposit, samples of which were taken as were samples of the oil.

The next day, the annular cup spaces at the tops of the two lower lifts (see sketch) were purged with bottled CO_2, it being admitted at one of the four taps in each lift, and vented at the other three. Attempts to remove the oil by hand skimming and later by spreading wood shavings over its surface and removing them with a sieve were unsuccessful. It was necessary to rig up the pump, and using a steel drum for a skimmer, pump out a mixture of oil and water, which was allowed to separate in a second drum. The water was drained back to the tank outside the lifts and the oil carried away in the drip truck.

A two-inch line was now installed to siphon the water from the tank to the ground outside. Since the tank bottom was only about three feet below ground level, it was possible to drain most of the water without pumping. Although the water had been pronounced safe to run into the storm sewer, a simple apparatus was set up to aerate it. The tank water was run through the aerator and to the sewer over a two week period.

While the water was being drained, several new, large, crown openings were provided to assure effective ventilation of the interior. When the water was removed, approximately twenty inches of sludge remained on the tank bottom. This resembled mud, and was apparently composed of rust and scale from the plates. It was neither tarry nor oily, and did not appear to be condensate. To remove it, a 10-foot square hole was burned through the sides of the tank and lifts to permit the entrance of a truck. This residue was sent to the West Conshohocken Plant for disposal.

Wrecking Operation

On April 24, the holder was turned over to the wrecker. He had completely removed the steel work by June 23, and by the end of July the holder pit had been filled in. During the removal of the 300 tons of steel, most of which was accomplished by the use of acetylene torches, a fire hose was kept at hand. The wooden crown-supporting structure was continually wetted, and on the occasions when the scale inside the steel plates commenced smoldering it was quickly extinguished with a stream of water. A scale that would burn with the continuous application of heat from an external source existed inside the tank even below the water level.

While the dismantling of the holder proceeded, work was in progress to install a new district regulator in a new location, and at the same time to simplify the intermediate and low pressure connections while eliminating those which would no longer be in use. By the beginning of August, the new regulator was in operation, and on August 8, the old regulator and yard and holder connections, which had previously been disconnected, were purged out with bottled CO_2 and retired.

DISCUSSION OF METHODS

Reinforcing Plate for Crown Tap—This was of ¼-inch steel, 18 inches square, and with ½-inch slots around the edge. The slots permitted slipping "L" bolts through corresponding holes in the crown. The heads were removed from 6-inch by

⅜-inch standard wrought iron bolts, and 1½ inches of the unthreaded ends bent at right angles while hot. The thread was extended. These were easily installed and much stronger than the largest toggle bolts available. A square rubber gasket, red-leaded on both sides, was used.

Drilling Crown—Holes in the crown were made with an air drill to avoid the hazard of sparking that would have attended the use of an electric tool.

Oil On Tank Water—The methods used to detect oil on the tank water proved inadequate. Reasonable assurance of discovering dispersed oil can be had only by taking a number of samples, and at least one ring of six or more equally spaced ¾-inch taps should be provided near the periphery of the crown in addition to a 3-inch or a 4-inch tap at the center. A second row of holes may be desirable in a large holder. Since nearly all of these are required as vents, their installation involves little additional expense. The ¾-inch taps will accommodate a glass tube, in which a sample can be taken that will show the thickness of the oil layer. The 3-inch or 4-inch tap will admit a small skimmer, with which a larger sample is obtainable.

Removal of the remaining oil should be commenced immediately after opening the holder, if this is feasible. It is most readily accomplished by dropping a flexible pump suction line into a drum or tub forced just below the water level to act as a rough skimmer. A mixture containing as little as 10 per cent oil is pumped out and separated in a drum, the water being drained outside the lifts. Complete removal of the remaining thin film is unnecessary, but may be accomplished by spreading wood shavings on its surface and retrieving them with a large sieve. Since the shavings blow around considerably, this method is advisable only where there is ready access to all parts of the water surface.

Oil samples taken after the Ardmore holder was opened had a flash point of 195 degrees Fahrenheit, which is fairly low for gas oil, and probably indicates absorption of gas and condensate. There was no permanent emulsion present, the oil separating readily.

Pump—A one-cylinder, portable, Homelite gasoline pump (rated at 4,500 gallons per hour at 10-ft. head) was used for pumping drips and skimming oil. Its use permitted all pumping to proceed rapidly. Knowledge of pump capacities with various sized suction lines permits using the equipment to best advantage.

Boiler—A portable, vertical, 20 horse power, tubular, coal-fired boiler was used. The 100-ft. steam line was covered with earth for insulation. The average atmospheric temperature during the actual purging was 60 degrees Fahrenheit, and the boiler pressure ranged from 25 lbs. to 45 lbs. gauge. A crown temperature of 100 degrees Fahrenheit was reached.

Purging Machine—A Roots-Connersville, Harrison Inert Gas Producer, rated at 35 MCF per hour at 3 lbs. pressure, was used for the purging. It was operated with reduced cooling water to give a gas temperature of 170 degrees Fahrenheit to help raise the crown temperature. The average analysis of the inert gas was: CO_2 — 13.0 per cent; O_2 — 0.2 per cent, CO — 0.8 per cent.

Deposit—A ⅛-inch layer of oily, fluffy, dark brown deposit covered the inner side of the crown plates and the crown supporting structure. When dried, it powdered easily. On a dry basis, it contained 34 per cent volatile matter which would burn only when heat from an external source was continuously applied. With the loss of the volatile matter, a black, carbonaceous residue remained. This contained considerable ash, which was probably iron. The deposit was not felt to introduce any great hazard to the wrecking operations, but as stated above, a fire hose was kept on hand during acetylene burning.

Purging Annular Cup Spaces—The annular cup spaces of the lower lifts of a holder contain a considerable quantity of gas. In recognition of this fact, these spaces of the Ardmore Holder were purged independently with CO_2 as previously mentioned. When a lift is to be grounded for an appreciable length of time, it may be advisable to purge it out or connect it temporarily with a source of gas under low pressure. Otherwise, since the annular space is sealed off from the holder, a small leak may dissipate the residual pressure and possibly cause the formation of an explosive mixture. If the tank water is lowered, or the temperature drops appreciably while the lift is landed, a slight suction in the space may result. Even if no other precaution is taken, a U-gauge should be installed on the lift while it is landed.

Draining Water—An aerator, consisting of a wooden basin 6 feet square, on which was mounted a horizontal 2-inch pipe in which several vertical nozzles were installed, was used to aerate the tank water. Because of the slow rate at which the water was released, this simple apparatus produced sufficient aeration.

Ford Foundation Development Installing Gas Warm Air Conditioners

All 80 of the terrace homes now being constructed in Dearborn, Michigan, as part of the Ford Foundation development of apartments, terrace homes, individual dwellings and shopping units, will be heated by the latest type of General Electric gas-fired warm air conditioners. With one unit servicing each new home, four sizes of gas-fired conditioners are being used. The series is designed by G. E. especially for residential applications. For seventy of the homes, furnace models with maximum outputs of 60,000 Btu per hour have been specified, while the remainder of the installations will utilize units with slightly higher ratings. The conditioners will be installed and the residences will be ready for occupancy early in 1940.

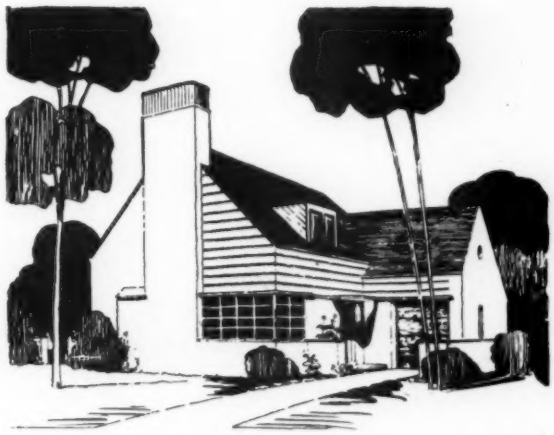
Developments in New Jersey, New York, Pennsylvania, the District of Columbia, Maryland, and Texas were studied before the project was begun, and the Ford Foundation is believed to incorporate the outstanding features found in the period of research. Upon completion of the present structures it is planned to continue building operations through 1940 and possibly until 1945. The building site has an ultimate housing capacity of approximately 16,000 persons.

The entire group of buildings is of steel frame construction, and is being built without the sounds of hammering and sawing. Instead, the framework is being erected by workmen using screw drivers and oversize sheet-metal screws. Ductwork for conveying the air circulated by the conditioners is supported directly from the steel framework of the buildings.

Ray Horan Named Sales Training Head for G-E Air Conditioner

Ray Horan has been appointed in charge of distributor and dealer sales training operations for the air conditioning and commercial refrigeration department of the General Electric Co., Bloomfield, N. J., according to a recent announcement by Glenn Gundell, manager of advertising and sales promotion. For the past two years Horan has spent the majority of his time in the field, co-operating with the G-E air conditioning distributors and dealers in their sales activities, aiding in sales meetings, and preparing courses of study for salesmen. His new duties include working with General Electric's 76 commercial refrigeration distributors as well as the 122 air conditioning distributors.

Summary of the Progress of Gas Heating in New Construction and Recommended Program For Its Future Development



By

James E. Cook

Westchester Lighting Company
Mt. Vernon, N. Y.

OUR INDUSTRY being no different than any other business, which might manufacture and market merchandise, could just as well be selling hats, toothpaste, breakfast food, or lingerie. But, like other enterprises, we must have an outlet for our goods. The breakfast food manufacturer directs his effort toward the grocer, the toothpaste manufacturer seeks his outlet through the druggist and so on. Our problem should not be more complex because of the nature of our product—the solution is identical—we need an outlet and we find it in the architect, builder, and dealer. These are the people who literally convey or market our product to the consumer, and the consumer, in our case, is the man who is building a house for himself or who is erecting one to sell. This also takes into account the man who is purchasing a house already built. We must please these people just as the local druggist, grocer, and dry goods merchants do; and forget entirely the fact that we are a utility.

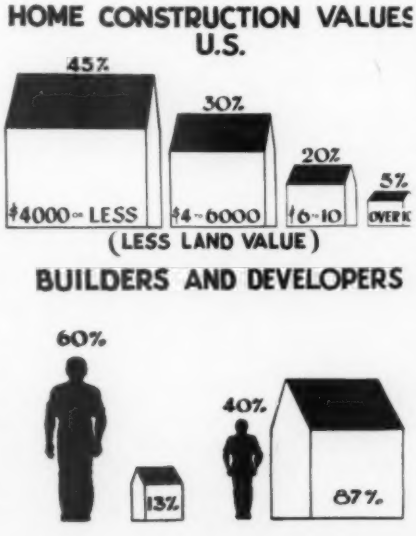
It is, of course, recognized, that the house heating load is of vital importance to our industry, and this is proven by the extensive promotional programs of a great many of the gas companies throughout the country. Frequently, this activity is restricted and confined to the existing house market with the result that very often a real lucrative market in the form of new house construction is totally ignored. This new construction market is an outlet that can not and should not be overlooked, and I am happy to say that the members of this council have been cognizant of its value, for the results are reflected in the answers to the questionnaire which I sent out previous to the preparation of this paper.

Presented at 10th Annual Meeting, Metropolitan House Heating and Air Conditioning Council, New York, N. Y., December 13, 1939.

Survey Table

In 1937, I submitted practically the same questions as this year, and believe me, it is most gratifying to notice the remarkable results that have been achieved where sales efforts were put on the new construction market. Will you be good enough to refer to the questionnaire, together with the answers to the questions I just referred to? As time will not permit our thoroughly analyzing both the 1937 and 1939 figures, I have just taken out the pertinent facts from the 1937 paper so that you may get an idea of the remarkable achievement made by some of the companies who really went after this new house business. The names of the companies on this work sheet have been purposely omitted and have been designated by numbers. If this questionnaire means anything you should be able, by the experience of others, to draw vital recommended sales procedure for the future sale of gas heat in new homes.

There being no alchemistic formula for successful selling, we give you our recommendations for future development of new house sales.



Recommendations

I. Where 50 or more new house sales are possible in a given territory per year, a special representative should be assigned to contact architects and builders and he should devote all his time and efforts to this work. One good reason that should make this activity worthwhile, is the fact that every new house that installs an oil burner ceases to be a prospect for gas heat for at least 7 years. Reason No. 2 is that new houses usually install a good system, almost 100% gas designed equipment, which with cooking, water heating and refrigeration means that the job is more liable to stick than if a conversion burner were installed. This Architects and Builders Division should be set up more as a promotion activity rather than a merchandising one. By that I mean that it should promulgate the use of gas by architects and builders, but should also work very closely with the dealer organizations, for it has definitely been proven, that the trend is away from gas company merchandising of equipment.

II.. Go after the small house market. It would be well for us to take

RESULTS OF QUESTIONNAIRE ON NEW HOUSE CONSTRUCTION IN METROPOLITAN AREA

Co.	Date	No-1 New House Sales-1939 Jan1-Nov1	No-1A Total Sales Jan1-Nov1 1939	% Winter Air Cond. No-2	% Dealer Sales No-3	Sell to Whom No-4	Selling Promotion No-5	Equip. Sales Company Jobber Mfr. No-6	Sales Encouragement No-7
1	1939	429	2000	14%	14%	Speculative Builder	Builder & Home owner	86% 0% 14%	No dealers in picture. Some manufacturer's agents. We cooperate fully. Same policies apply as for our own sales.
	1937	181	2029	2%	0%				
2	1939	966	1731	80%	100%	Depends on price class, but I should say the owner built house	Both	0% 10% 90%	Give him advantage of full commissions by staying out of new construction - merchandising ourselves. Survey and sales help. Direct mail and newspaper advertising of a general nature. Window displays for his place of business. Lawn signs with dealer's name on it.
	1937	567	1943	72%	85-90%				
3	1939	220	1303	80%	None	Speculative Builder	Architect	15% 0% 85%	We cooperate with manufacturer's agents by advertising in local newspapers and trade magazines.
	1937	15	1235	2%	5%				
4	1939	314	700	70%	97%	Speculative Builder	Architect	3% 6% 91%	Cooperate with dealer in buying direct from manufacturer at full gas company discounts. Go with them in an effort to close contracts also help manufacturer appoint these dealers.
	1937	300	1271	52%	10%				
5	1939	151	383	70%	10%	Speculative Builder Owner Builder Approx. 50% both ways	Both	63.5% 3.7% 32.8%	Our Company does the sales promotional work and cooperates with dealers and manufacturer's agents in closing sales and also assists in an advisory way in connection with installation.
	1937	255	499	19.2%	73.7%				
6	1939	110	275	95%	100%	Owner Builder			
	1937	22	252	60%	50%				
7	1939	65	181	31%	100%	Both - since 90% of new construction sold gas heat	Both	0% 100% 0%	Company has adopted policy of staying out of boiler & furnace field, allowing jobbers to sell direct. Company cooperates by furnishing heating estimates, etc.
	1937	28	137	64	60%				
8	1939	99	158	3%	1.9%	Speculative Builder	Owner	95.6% 1.9% 2.5%	We hold periodic meetings at our branch offices and also have a plumber-contact man to assist our dealers at all times and to cooperate with them. Bonus paid on dealers' sales.
	1937								
9	1939	132	157	98%	100%	Owner Builder	Owner	0% 2% 98%	Our heating salesmen sell the idea of heating with gas to the owners or builders. Then they contact the dealers to figure on the heating equipment.
	1937								
10	1939	41	139	None	None	Speculative Builder	Builder	100% 0% 0%	Nothing
	1937	23	139	13%	0%				
11	1939	21	91	86%	46%	Both	First architect, then owner with architect's permission	40% 46% 14%	Nothing more than active sales cooperation. We also install gas line and thermostat for a flat $10.
	1937								
12	1939	17	81	34%	None	Owner Builder	Owner	67% 0% 33%	Giving estimates, contacting their prospects with them, and when they call on any prospect, on whom we are working, we then recommend their equipment and try to get the order for them.
	1937	21	186	14%	0%				
13	1939	26	75	90%	100%	Both	Both	50% 50% 0%	Supervise installation, make layout and generally help sell owner for him as operating costs.
	1937								
14	1939	10	33	90%	80%	Owner Builder	Both	20% 80% 0%	Assisting him where possible - make surveys, etc.
	1937	5	73	80%	0%				

a leaf from the book of the automobile industry. 10 years ago, 20% of all automobiles had a list price of more than $1,000 whereas, this year only 1.2% have a list price of over $1,000. The balance all list for $750 or less. This definitely shows the trend toward low priced items. Henry Ford said, "Cars for the masses." Why should we not adjust the slogan to fit our product, "Gas for the masses." The next chart (Chart No. 2) proves that the trend during the past two years has been toward low cost housing, and I will now give you a few reasons why gas should be easier to sell in small homes than in large ones.

A. Wide selectability of types of heating plants and applications of same.
B. Flexibility of gas as a fuel.
C. Average MCF return from small house development higher than from large consumer.

In Westchester County we made a

study in two developments using gas heat. These developments represented two distinct income groups and the values of the houses were correspondingly relative. In the higher income bracket group where homes were valued at approximately $14,000, we selected 25 customers at random, and an analysis of their 12 months bills indicated that our income per customer averaged $266, and the MCF rate realized by the company was $.635; whereas, the low cost housing development in which the homes were valued at $6,000 each, the average revenue per customer per year was $165 and the average MCF return to the company $.747-$.112 per MCF higher or 17% more return.

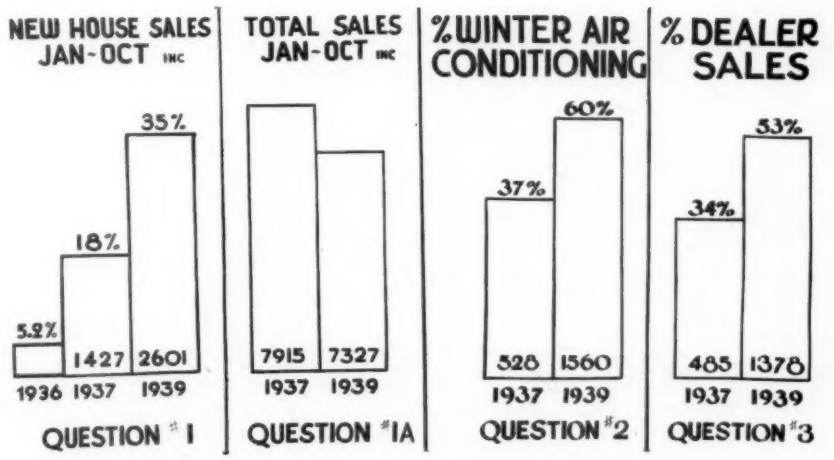
D. Price of equipment lower than oil.

III. Dealer activity should be promoted.

A. Encourage manufacturer to sell direct to dealers who are authorized and approved by the gas company and who live up to certain qualifications as to fitness and financial responsibility.

B. By allowing the dealer to purchase at a lower price, which he could do, if he does business direct with the manufacturer. This low price will, no doubt, reflect itself in the ultimate price to the consumer and make a better picture for gas where competitive bidding is involved.

C. The gas company should always work with the manufacturers to secure competent dealers. After a dealer is appointed the gas company should give him leads, selling aids, and cooperative advertising wherever possible. His interest should not be permitted to lag for a second. It will also help us eliminate a lot of the inferior steel furnaces that are now being offered for sale. By close contact with these dealers we can dictate their sales policies and insure that cast iron air conditioners are put on our lines.



SURVEY OF GAS HEAT IN NEW CONSTRUCTION IN METROPOLITAN NEW YORK AREA

Question No. 1—What is the total number of NEW HOMES installing gas heating (Actual Sales where gas contracts have been signed) January 1st to November 1st, 1939?.....
(a) TOTAL House Heating Sales same period.....

Question No. 2—Per cent of homes mentioned in Question No. 1 using Winter Air Conditioning? (January-November 1939)
Ans. .....

Question No. 3—Per cent of homes mentioned in Question No. 1, in which sales were made through a dealer? (January-November 1939)
Ans. .....

Question No. 4—Who are you most successful in selling?
Ans.—Speculative Builder .....
Owner Builder .....

Question No. 5—Do you do your selling promotion with the Architect, or the owner himself?
Ans. .....

Question No. 6—What per cent of Equipment Sales in Question No. 1 was sold by:
Ans.—Your Company Direct .....%
Jobber .....%
Manufacturer or His Agent .....%

Question No. 7—What are you doing to encourage dealer who merchandises and installs, or manufacturers' agents who sell direct to trade?
Ans. .....
.....
.....

Representative .....
Name of Company .....
Address .....

Please send this report to J. E. Cook, Westchester Lighting Company, 9 So. First Ave., Mount Vernon, New York, NOT LATER THAN DEC. 1, 1939.

***Use reverse side of this sheet for any suggestions, which will be appreciated.**

This procedure of selling to the dealer will benefit the gas company from a credit standpoint in the following ways.

1. Will relieve them of the credit headache.
2. Eliminates the cause for embarrassment brought about by collections which are quite difficult with most of the trade.
3. Manufacturer can bring collection pressure to bear without fear of reprisals.
4. Loss from uncollectibles.
5. Eliminates loss due to physical handling of discount equipment.

IV. Cooperative Advertising.

A. Whenever possible the local gas company should cooperate with the developer who uses gas for heating. This is best done by tie-in advertisements in the local newspapers. That is, when the developer runs an ad in any of the local papers featuring his houses, the gas company should take space on the same page and call attention to the fact that this builder uses gas for heating his homes.

B. If all 4 big jobs are handled by gas, a further story can be told.

C. The use of bill stuffers calling attention to local developments using gas. This is a good media, provided, of course, company policy justifies this type of promotion.

V. Sell more Air Conditioning.

A. There is no need for me to urge that you sell more air conditioning because the record borne out of this chart shows that already we have taken hold on this method of selling more gas.

B. Where combination companies operate, a very profitable electric load is assured and the use of the fan for summer air circulation should be encouraged.

What does air conditioning do for you, as a gas company?

1. It insures less take-outs.

2. You can sell lower operating costs.

3. It insures a more or less permanent water heating load because it is the only type of heating that requires auxiliary water heating, and as oil water heaters are both expensive and unreliable, oil burner dealers will welcome your help and advice, as well as being pleased to get rid of the service headaches that accompany these oil-fired water heating units. Do not forget that the house heating load shows a very small return to the company, whereas, water heating insures a higher and more profitable return.

6. Cooperate on all sponsored model homes. Whenever a local civic body, such as the Chamber of Commerce, American Legion, Elks, or one of the service clubs, builds or sponsors a model home which will be open for public display, the gas company misses a great opportunity if they do not strive to have this house heated by gas—in fact they should make every effort to see that gas is used for the 4 big jobs—and they should cooperate to the nth degree as follows:

A. Newspaper advertising.

B. Give-away circulars which can be handed out at the home.

C. Have house heating representatives in attendance to explain various gas appliances.

7. The use of lawn signs on all new construction. This will insure at least two months of effective advertising.

8. Real estate contacts. All gas companies should have at least one member on the local realty board, and the favor of these people should be curried at all times.

9. The use of new house directory, (show directory). Companies operating on a large scale could well afford to issue such a booklet from time to time. This one, which is published by Consolidated Edison System, contains pictures of homes, locations, price, and a short specification, as an aid to developers who use gas for house heating.

10. Last but not least, and most important of all — Consistently contact your architects. We can never lose sight of the fact that 67c of every building dollar is spent through him or is directly influenced by him. The speculative builder has come more and more to realize that he cannot expect to sell houses without charm and eye appeal, and this feature can only be had where an architect is employed to design the house.

Recommended Revisions To Requirements Approved

Consumers Benefited by Action of Approval Requirements Committee

Recent action of the American Gas Association Approval Requirements Committee in approving recommended revisions to standards for major domestic gas appliances will be of considerable interest to consumers and manufacturers. In accordance with its usual procedure in keeping standards up to date, requirements for central heating appliances, clothes dryers, hot plates and laundry stoves, ranges, space heaters and unit heaters were revised and extended.

New markings on name plates for various appliances will be of interest to manufacturers of approved appliances. They will indicate exactly how the equipment was tested in the Laboratories. For example, insulated ranges will be marked "insulated" to indicate that ovens are completely insulated, and comply with the wall temperature tests when installed closer to the walls than uninsulated ranges. Thus, this marking will also serve as a guide for the proper installation of domestic gas ranges.

Similarly, warm air furnaces will be marked appropriately to indicate whether they were tested in the Laboratories as gravity or forced-air units. By these means the consumer will be enabled to determine what he is buying and will know whether the equipment is being installed satisfactorily. At the same time, in order to insure greater safety when unit heaters are installed in locations such as garages and airplane hangars, installation instructions will be required on the name plate to specify that the heater should be installed at least eight feet above the floor.

Keeping abreast with the addition of mechanical and electrical controls which have been developed and installed on gas burning equipment to increase the ease of operation and convenience of the appliance to the consumer, the Approval Requirements Committee adopted suitable construction and performance standards to assure safe and positive action of these devices, failure of which will automatically turn off the gas supply. In order to provide assurance that automatic electric ignition devices and automatic lighters will function properly under all conditions of use and at all times during the life time of the appliance, adequate life tests were incorporated in the respective standards covering these accessories. Provisions for electrical parts and wiring were based on the latest edition of the National Electrical Code accepted by the American Standards Association.

Satisfactory consumer experience with approved domestic gas ranges and water heaters for use with liquefied petroleum gases and butane-air gas has resulted in a great demand for Laboratories' approval for other types of gas-burning equipment. Consequently, the Approval Requirements Committee extended the standards for all major domestic gas appliances to cover the use of these gases. This action will provide equivalent construction and performance tests as for city gas appliances with additional requirements which are necessary for the inherent differences in these gases.

These revised standards are being presented to the American Standards Association for acceptance as American Standard. It is intended that they will become effective as of January 1, 1941. Bearing out previous experience of enacting new and revised standards in the past, it is expected that this action will further the development of safer, more substantially constructed, and better performing types of gas-burning equipment.

The Selling Parade

A Digest of Successful Selling Ideas

By Charles B. Roth

ONE of the finest sales executives I ever knew had only one qualification in hiring salesmen. What a strange qualification! I have never met another executive who demanded it. The qualification? That the salesman he hired be a quick thinker!

"A salesman is like an officer in charge of an army during an important engagement," he explained to me. "Sometimes a battle takes a wrong turn. Then the general has to think fast. Perhaps in the fraction of a second he has to make a decision that will save the day or destroy his army."

"But salesmen aren't waging warfare against their customers," I objected.

He admitted that: "But they have the same kind of responsibility—and the same hazard in making a wrong decision," he reminded me. "And their decisions can't wait. A man has to be a fast thinker to sell for me."

Then I recollected having just read an article about how the sales manager of a large paper-making machinery house in Massachusetts had made one of his largest sales. It seemed to illustrate the point.

This sales manager called in person on an important prospect, explained his proposition, and had the prospect tell him: "Now, don't call on me any more. You'll be in town for a while, won't you?"

"As long as you say, sir."

"You're stopping at the Commercial House, aren't you? When I get ready to place this order, I'll 'phone you one way or the other," the prospect said.

The sales manager went to the hotel; a typical small town hotel in a typical small town. There he waited one day, two days, five days, a week. He waited a second week. He waited a third week.

At five in the afternoon on Friday of the third week his telephone rang. "You can't have the order," said the prospect. "Your price is too high."

Then the sales manager simply had to be what my sales executive calls a "quick thinker." He suspected that the prospect was trying to break his patience and force a quick reduction in price.

So he said: "Well, I'm sorry, of course. But you don't really have to tell me that at this particular minute, do you?"

"What do you mean?" asked the prospect.

"You could tell me the same thing in your office tomorrow morning at nine, couldn't you? I've been here three weeks. After all, I can stay another day just as easily as not."

Next morning he closed a deal for

one machine, and sold another for good measure. And he didn't cut his price to do it. The deal amounted to well over $500,000.

The salesman thought fast enough to leave a way, after the customer had turned him down, to reopen negotiations.

* * * *

Sometimes your customers want to crab, crab, crab, find fault, criticize, abuse. Many salesmen are thrown for a loss when this happens to them. They let the crabbing customers get them all upset.

What does the salesman do with the customer who wants to crab?

The answer: *Let him crab.*

The best way to handle the man who crabs and finds fault, who wants to tear you and your firm limb from limb, who sees something wrong with the government, the country, the world, is to let him talk it off. Don't object. Don't interrupt. Don't argue. Just listen.

If he thinks he has an honest grievance, hear him out. Sympathize with him. And then when he has cooled himself off, go in and sell him.

Once on my sales force I had a middle-aged, grey-haired woman who was sure-death for crabbers. Whenever we ran into a mean one we invariably sent her to see him, and she invariably came back with the order.

I asked her how she did it and she told me: "I guess it's my maternal instinct at work. They don't impress me as big grown up business men at all, but as little boys having a little boy tantrum. I treat 'em just as I used to treat my little boy, Jack—just listen to them, soothe them. And they buy."

Soothe them, don't fight them,—there's your rule in handling the crabs.

* * * *

Every day a man in the selling end of business gains an extra dividend for himself, for his firm and for his customers. In time it is these extra-dividends, which come without any extra effort whatever, that make a great and a successful salesman.

This comforting conception of salesmanship is that of one of the highest minded business men I have ever known, Adolph Coors, Jr., head of a nationally famous business.

"There is a cumulative effect of a salesman's work," Mr. Coors believes, "that most of us, especially the salesmen themselves, are prone to overlook."

"Just what do you mean?" I asked him.

"This: Each time the salesman calls upon a customer, whether he sells him or not, he gains something. He gains a little more of his confidence, a little more of the customer's friendship."

"I see."

"He has made a little deeper impression upon the customer." Mr. Coors continued. "In time, the customer looks upon the salesman as a steadfast friend, one with whom it is a pleasure to do business. The sum total of these friendships spells success for any salesman. The cumulative effect of a salesman's work is

greater than that of any other profession."

"Then it must be a grevious mistake to high-pressure customers, quarrel with them, do anything except show that you are just a friendly person, with a friendly company, engaged in a friendly business—isn't that about the picture?" I asked.

"I think it is," said he. "Salesmanship and friendship are twin brothers. And the older a friendship becomes, the more valuable."

* * * *

One of my acquaintances is a manufacturer with an engineering mind. He confided in me recently that all his life his one regret is that he is not a salesman.

"But you are a salesman," I told him. "You are successful. You are the head of a large business. You sell yourself, your ideas to those around you."

"Yes, but I do not mean in that way. I mean I wish I had the ability to go out and make sales, actual sales, to strangers, as my men do."

"How do you know you couldn't?" I asked.

"My training has all been against it," said he. "I am an engineer, a researchist. My job is one on which I can spend hours, days, weeks, months if need be ferreting out the answer to a problem. But the salesman cannot be leisurely. He works with new problems every minute of every day. I think he has to have a higher degree of intelligence—certainly more social intelligence—than any other man in business."

Upon thinking the matter over, I believe that this gentleman is absolutely right. It hadn't struck me so forcibly until I heard him put it in the way he did.

* * * *

I sat in a chair next to the desk of an eminent personnel man while he winnowed out the chaff from the

wheat among the applicants for sales jobs with his big firm.

He asked these applicants many questions which I thought were impertinent. This struck me as strange. He isn't an impertinent man usually, but a soft spoken, considerate gentleman.

One thing he did that I considered to be very bad taste was to criticize every applicant, not in a generous, gracious way, but bluntly, like a man of no breeding.

When the last one had gone through the mill, he turned to me, smiled in his usual gracious way and said: "Well, that's done. I'm sure I enjoyed it less than those lads did."

"Enjoyed what?"

"The razzing I gave each. Didn't you notice?"

"Oh, was that purposeful—an act you put on with a motive?"

"Why, bless you, of course it was! Do you think I'm the kind of a man I was when I was talking to those boys?" he demanded.

"I didn't think so. But tell me why you baited them so mercilessly."

"To see how many of them could stand criticism," said he. "You noticed that I found fault with each of them, did it in a very personal, almost insulting, way, didn't you?"

"Yes."

"I wanted to see if they could take it. A salesman who can't stand criticism can't sell: his customers are going to criticize him, or his goods, or the house sooner or later. If he blows up and wants to fight back, he's temperamentally unfitted to sell. You can't be a salesman and a sorehead at the same time," he concluded.

The man he hired for the job was a big, jovial fellow with a sense of humor, a man who could laugh at himself and was impervious to the shafts and barbs of criticism.

"That boy will go far," said the personnel man.

I looked in the other day to see how far he had gone. The man who could take it is already assistant sales manager.

* * * *

From Illinois a retail salesman writes me that his big problem is that of "stickers." In case you don't know what a sticker is—but you do know, because every store in the world has certain items of merchandise that stick and stick and stick, that won't be sold.

"What shall we do about 'em?" his letter asked.

I am replying here: The only stickers that are really stickers and that you can't do anything about are pieces of dishonest merchandise. If a thing represents good value, it isn't a sticker. It becomes merely a problem in salesmanship.

There is nothing legitimate which cannot be sold by the application of the principles of salesmanship. If you have stickers in your store, make them the subject of some special selling effort. Get behind them. Try to sell them. Push them. Show them to every customer. Soon they won't be on the shelves. There is nothing that can resist the push of good salesmanship, stickers included.

SUPERIOR GAS METERS

For Sound Values and Continuous Operating Economy. Meters for Domestic and Industrial Use, All Sizes 5B to 60C.

Wet Test and Demonstration Meters
Diaphragms—Service Cleaners
Provers—Meter Repairs.

Superior Meters are built to A. G. A. specifications to provide complete protection against leaks and costly repairs. Write for details and quotations.

SUPERIOR METER COMPANY

167 41st Street ***Brooklyn, N. Y.***

Smiling Animated Character Is Super Salesman

By
Mac Roy Rasor

CHEERFUL! My my—*you never see Frugal Flame unless he has a smile on his face. He just seems to be effervescing with life all the time—and yet he always carries a message of sound advice and he has a reputation of being a mighty good friend to have around the house.*

And you can bet that Frugal Flame has a job. He's one of the best salesmen on the force of the Texas Public Service Company of Austin, Texas. Yet, he's just an animated little creature that has evolved from a bathtub idea into a familiar cartoon character in Austin advertising circles.

"If comic strips are so popular, if animated characters have met such success on the motion picture screen," S. M. Apperson, sales manager of the Texas Public Service Company, reasoned one morning in his bath, "then why wouldn't an animated character have a similar appeal in an advertisement?"

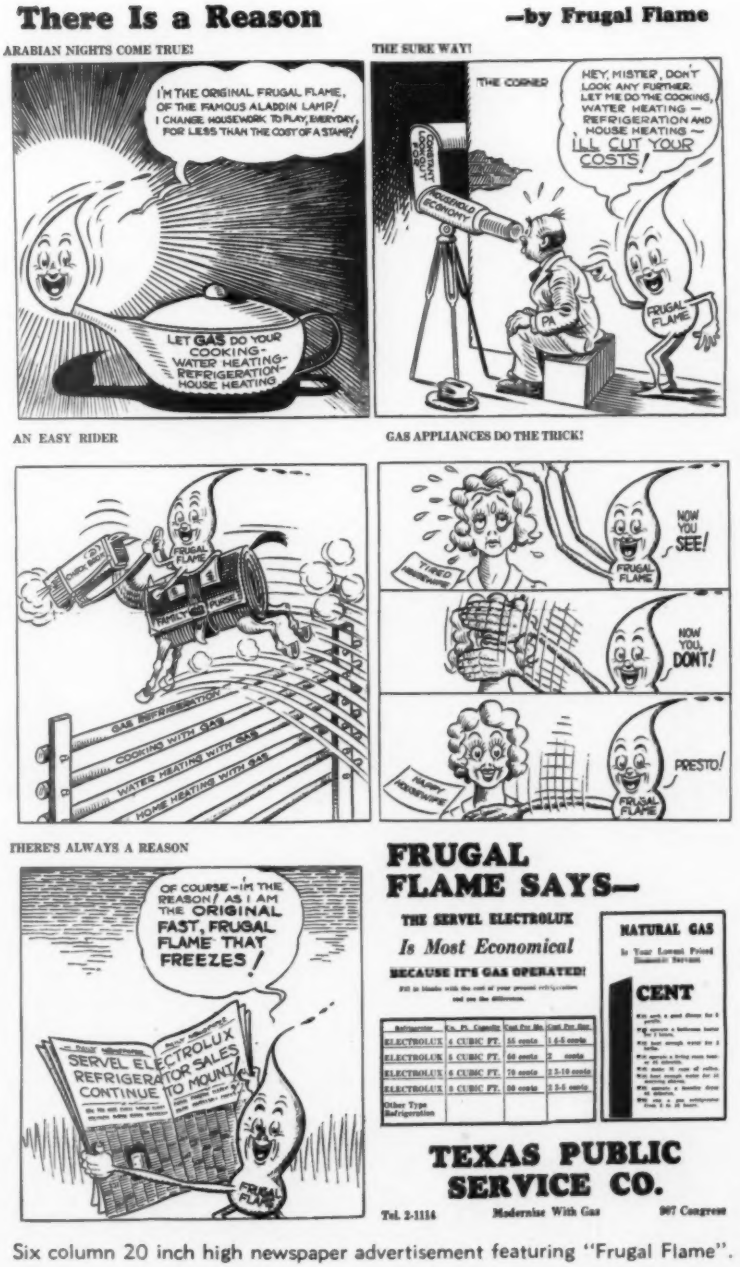
The more he thought about it, the better he liked the idea. A cheerful little fellow in the shape of a gas jet flame with modified body, arms, and legs took shape in his mind. A three-column cartoon, similar to "Out Our Way" or "Our Boarding House" would give the little brain child sufficient room to play around and perform his antics and duties.

Local cartoonist M. A. Dunning was contacted and Frugal Flame had his birth. A few days later the little flame-like creature popped out of an ordinary lamp to make his debut in local newspapers.

"I'm the original Frugal Flame,
Of the famous Aladdin lamp!
I change the house work to play,
every day,
For less than the cost of a stamp!"

Those were the words of Frugal Flame, and those were the words that launched one of the most successful advertising ideas that the Texas Public Service Company has tried in several years.

The cartoons are used within a


There Is a Reason
—by Frugal Flame
ARABIAN NIGHTS COME TRUE!
I'M THE ORIGINAL FRUGAL FLAME, OF THE FAMOUS ALADDIN LAMP! I CHANGE HOUSEWORK TO PLAY, EVERYDAY, FOR LESS THAN THE COST OF A STAMP!
LET GAS DO YOUR COOKING- WATER HEATING- REFRIGERATION- HOUSE HEATING
THE SURE WAY!
THE CORNER
HEY, MISTER, DON'T LOOK ANY FURTHER. LET ME DO THE COOKING, WATER HEATING — REFRIGERATION AND HOUSE HEATING — I'LL CUT YOUR COSTS!
COMPANY PROFITS
HOUSEHOLD ECONOMY
PA
FRUGAL FLAME
AN EASY RIDER
FRUGAL FLAME
GAS REFRIGERATION
COOKING WITH GAS
WATER HEATING WITH GAS
HOME HEATING WITH GAS
GAS APPLIANCES DO THE TRICK!
NOW YOU SEE!
FRUGAL FLAME
TIRED HOUSEWIFE
NOW YOU DON'T!
PRESTO!
HAPPY HOUSEWIFE
THERE'S ALWAYS A REASON
OF COURSE—I'M THE REASON! AS I AM THE ORIGINAL FAST, FRUGAL FLAME THAT FREEZES!
SERVEL ELECTROLUX REFRIGERATOR SALES CONTINUE TO MOUNT!
FRUGAL FLAME
FRUGAL FLAME SAYS—
THE SERVEL ELECTROLUX
Is Most Economical
BECAUSE IT'S GAS OPERATED!
NATURAL GAS
CENT
TEXAS PUBLIC SERVICE CO.
Tel. 2-1114
Modernize With Gas
907 Congress

Six column 20 inch high newspaper advertisement featuring "Frugal Flame".

larger advertisement ordinarily, Mr. Apperson explains. No effort is made to run the cartoons with daily or weekly regularity. Mr. Apperson has found that the animated character is especially effective in special promotions; so he is used consistently whenever the company has this type of work to be done. The Frugal Flame has appeared three or four times a month for the last three months.

Frugal Flame is a little more expensive than the ordinary advertisement because of the cartooning and line engraving necessary to reproduce the cartoons; but the little fellow easily pays for his upkeep in sales increases, Mr. Apperson explains. He's the most versatile salesman in the company and can sell anything connected with gas: refrigerators, water heaters, house heaters, ranges, and even gas itself.

Frugal Flame's success has been based on his appeal to everyone. The same sort of attraction that the comic page has for the average individual has been the basic idea carried out in planning the cartoons of Frugal Flame. The cartoons are never so involved but what they can be seen, read, and comprehended in only little more time than a mere glance.

And you can bet that Frugal Flame's glowing smile is plenty contagious. After the results that smile has been getting, the whole sales force is plenty pleased—and it is smiling, too.

American Gas Association Organization Meeting
Technical Section Committees at Belmont Plaza, New York, N. Y. Week of December 4, 1939

Left to Right—1st row, front: 1. H. W. Hartman, American Gas Association, New York, N. Y. 2. T. J. Noonan, East Ohio Gas Company, Cleveland, Ohio. 3. W. K. Beard, The Philadelphia Gas Works Company, Philadelphia, Pa. 4. A. C. Cherry, Cincinnati Gas & Electric Corp., Cincinnati, Ohio.

Left to Right—2nd row: 1. K. B. Nagler, The Peoples Gas Light & Coke Co., Chicago, Ill. 2. S. Cohn, The Peoples Gas Light & Coke Co., Chicago, Ill. 3. S. J. Modzikowski, The Peoples Gas Light & Coke Company, Chicago, Ill. 4. Fred M. Goodwin, Boston Consolidated Gas Co., Boston, Mass. 5. John H. Wolfe, Consolidated Gas, Electric Light & Power Co., Baltimore, Md. 6. C. H. Waring, Kansas City Gas Company, Kansas City, Mo. 7. Herman G. Horstman, Public Service Co. of Indiana, Indianapolis, Ind.

Left to Right—3rd row: 1. W. J. Murdock, Western United Gas & Electric Co., Joliet, Ill. 2. O. H. Smith, Consolidated Edison Company of New York, N. Y. C. 3. L. E. Knowlton, Providence Gas Co., Providence, R. I. 4. R. G. Griswold, Electric Advisers, Inc., New York, N. Y. 5. L. J. Willien, Public Utility Engineering & Service Corp., Chicago, Ill. 6. C. F. Turner, The East Ohio Gas Company, Cleveland, Ohio.

Left to Right—4th row: 1. John J. Crilly, Elizabethtown Consolidated Gas Co., Elizabethtown, N. J. 2. George T. Bentley, Michigan Consolidated Gas Company, Ann Arbor, Mich. 3. C. S. Goldsmith, The Brooklyn Union Gas Company, Brooklyn, N. Y. 4. F. C. Weber, Glen Head, Long Island, N. Y. 5. Fred Denig, Koppers Company, Pittsburgh, Pa. 6. F. F. Ingwall, C. V. Binghamton Gas Works, Binghamton, N. Y. 7. E. L. Sweeney, Boston Consolidated Gas Company, Everett, Mass.

Gas Plant at Sterling, Illinois
Nature Contributes To Attractive Setting

The accompanying photograph of the Sterling Gas Plant of the Illinois Northern Utilities Company taken from Lawrence Park in the Rock River shows the general location of the structures at the plant.

The tall structure at the center houses 5 Koppers combination continuous vertical ovens which have a capacity of 750 MCF of 565 Btu. coal gas, also the Kerpley Producer for oven heating, and the coal and coke handling apparatus and daily storage hoppers.

The structure at the right of the ovens houses the Boiler Plant and also one Western Gas Construction Co. 6 ft. Water Gas Set, installed during 1926, and one 7 ft. Gas Machinery Co. Water Gas Set with automatic control installed during 1937.

The white structure in the center foreground houses the By-Product Plant, together with the Exhausters, Pumps, Station Meters, and four Chicago Pneumatic Compressors. Immediately back of the By-Product plant may be seen the tops of the scrubber towers, the washer cooler and condensors. The Purifiers, 4 in number, are at the right of the Pump House in the right foreground.

The plant is capable of producing one and one-half million cu. ft. of 565 Btu. coal and water gas daily.

The plant serves not only the city of Sterling, but also, by transmission mains, the cities of Rock Falls, Morrison, Dixon, Polo, Oregon, and Mt. Morris, Illinois, with a combined population of 35,000. There are 8,334 gas customers in these cities.

T. T. Larkin is District Superintendent and C. C. Clausen Superintendent of the Gas Department of the Sterling District.

TITAN WATER HEATER CONTROLS

AGA Approved TITAN Temperature and Pressure Relief Valve

This device is installed on the hot water outlet in the tank directly in the flow of water. Action, as a result, is unfailing and positive, there being no dead pockets to prevent proper functioning of relief valve.

Pressure relief is obtained through a spring-loaded valve which opens when the pressure reaches a predetermined point. Should the water become overheated to 200° F, a fusible disc melts and lets the water escape thereby preventing a further increase in temperature.

The Titan Relief Valve serves as a coupling connected in the line thereby eliminating the necessity and expense of a tee fitting. To replace fusible disc, it is not necessary to disassemble valves or piping in any way.

Design for application to storage or range boilers. Prevents corrosion, scalding and explosion.

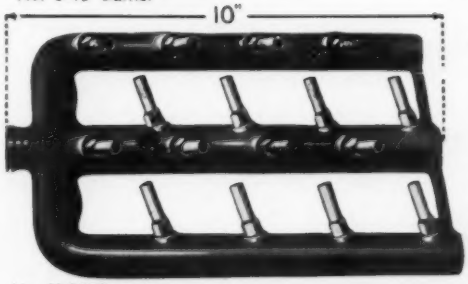
Catalog and full information upon request.

The Titan Valve & Manufacturing Company

Thermostats • Safety Pilots • Relief Valves • Safetystats
9913 Elk Avenue Cleveland, Ohio

BARBER BURNERS *for* All Gas Appliances

No. S-15 Burner



No. U-16 Burner

Give Your Appliance the Sales Advantage of BARBER Burner Equipment!

•

Efficiency! Economy! Performance!

On Natural, Artificial, or Butane Gas

•

Send for Catalog 38A —showing all types of Appliance Burners, Conversion Burners, Regulators.

THE BARBER GAS BURNER CO.
3704 Superior Ave. Cleveland, Ohio

BARBER *Automatic* JET GAS BURNERS

Legal Right of Employers to Develop and Patent Employe's Inventions

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

FREQUENTLY, executives and officials of gas corporations, and municipalities, experience difficulty in determining the true and legal ownership of patents and developments made by employes.

Particularly for the reason that quite recently several higher court cases have changed and varied the old law on this subject it is informative, as well as interesting, to quickly review the old law and ultimately explain the present law as established by these new higher court decisions.

It is interesting to observe that far back in the early history of England the word "patent" was created by the King of England who gave to his influential friends and supporters the exclusive rights to import or sell the necessities of life such as salt, sugar, flour, and the like. By this plan, the holders of these valuable patent grants were induced to perpetually support the King by being able to extort exorbitant prices for their products from the general public, and thus earn a luxurious livelihood with little effort.

However, the common people soon were oppressed beyond endurance by having to pay outrageous prices for these necessities, and after a time to satisfy the demands of the people, the King withdrew these undeserved and outrageous patent grants. Then patent laws were enacted which offered to the inventors of new and useful things the exclusive grants *for limited periods* to make, sell, and use the products of their brains and originality.

When the United States Patent Laws were formulated, the founders of our country realized the necessity of drafting these laws especially for the purpose of creating interest in individuals who were naturally endowed with the inventive genius, so that they might be induced to exert this special faculty toward inventing new and improved things by which the public would benefit. Therefore, contrary to the opinion of the majority of persons, the patent laws were *not* formulated for the purpose of enabling inventors to hold a monopoly by which to obtain exorbitant prices for patented commodities and become rich, but for the purpose of inducing inventors to invent new things from which the public may benefit.

For instance, one of the earliest higher courts (21 How. 322) in commenting upon the patent monopoly, said:

"It is undeniably true, that the limited and temporary monopoly granted to inventors was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly."

Therefore, it is quite apparent that although the obsolete patent laws gave to inventors a perfect monopoly for a limited term of years, these protective laws were designed to benefit the public.

Ownership of Patent

It is important to know that in the United States, under the ordinary law, the owner of an invention, and the one who has a legal right to the patent, is the person who was the first inventor of the invention. In other words, a person may obtain a patent, but if he is not the original inventor he is not the actual owner of the patent and the person who first invented the thing patented may appeal to the court which will take the patent from the one to whom it was wrongfully issued, and award the patent to the original inventor.

Another important point of law is that *any person who makes, sells, or uses* a patented invention, without authority of the patentee, is liable for infringement to the owner of the patent. Moreover, it is immaterial whether an unauthorized user of the patented invention is aware that he is performing infringing acts, because an innocent infringer is equally as liable as an intentional one.

Since a patent gives the patentee the exclusive right to make, sell, and use the invention, during the term of the patent, he may refuse to make and sell the invention, and he may also refuse to license others to benefit by its use, if he so desires. (47 U. S. 146.)

While the above explained law of patent ownership is presently effective, yet many new higher court decisions vary or absolutely contradict old patent law. Executives and officials must necessarily be informed of the new and modern law in order to be able to successfully determine correct ownership of patents.

For illustration, until recently the old law was established that an employe was, under all conditions, the sole owner of all patents of his inventions although he perfected the inventions by experimentations made on the employer's time, and with his employer's tools and equipment in his factory. (229 F. 150.) And in an old Supreme Court of the United States decision (149 U. S. 315), the court held that when an employer employs a skilled workman to work in or take charge of his plant and the employe devotes his time to making improvements, the employe and *not* the employer is entitled to ownership of the patents obtained for the inventions.

The legal effect of this old and *now obsolete law* was that although an employe was paid to improve the employer's business and perfect improvements the employe owned all patents obtained for inventions that he perfected while in the employer's employment. In other words, the employer merely held a "shopright," which gave him the right to make, sell, and use the inventions, but the employe was privileged to make, sell and use the invention, and most important he could license it to competitors, because he actually owned the patents.

On the other hand, it is interesting to know that according to the latest higher court cases the old law is changed and, at present, the law is as follows:

If a patent is issued in the name of an inventor, and relates to an invention conceived, experimented with, and perfected on his employer's time, the true ownership of the patent lies with the employer. Of course, all these facts must be proved before a court will issue an order requesting the Patent Office to transfer the title of a patent already issued, from the name of the inventor to the employer. But it will be done.

On the other hand, simply because an employe is employed and paid to perform *certain* duties, the employer cannot claim the ownership of an invention that an employe conceives and perfects while *not* engaged in performing his *regular* duty. In other words, an employer has no common law rights of ownership in an employe's invention which is made *entirely* on the employe's time, unless a contract to that effect exists or there is a written agreement between the employer and employe.

Contracts with Employes

As above explained, the old law gave an employe the title of a patent on an invention which was made on the time of his employer. The inventor had the right to license the patent or sell it outright to any person or firm as he desired. The employer in whose services the employe conceived and perfected the invention had the shop right to manufacture and sell the product without paying a license to the patentee; but he had no other interest in the patent. Therefore, in many instances employers compelled employes to make contracts and assign all inventions perfected during regular working hours to their employers. In other words, for many years it was customary to provide a written agreement between the employer and his workmen, wherein the employes specifically and unmistakably agreed to assign all the patent rights to the employer on inventions made while working on the employer's time. During those years the existence of such a contract was necessary in order to assure the employer that he would receive the benefits of the inventive faculty and ability of the employes, even though the inventors actually were paid to design and invent new things.

At present, a signed contract in which an employe unmistakably agrees to assign to his employer all inventions made on the employer's time is not necessary but it may eliminate litigation wherein the employer would be required to prove that the invention in controversy was perfected specifically while the employe was being paid by his employer. Obviously, an additional clause may be added to this contract in which the employe agrees to assign the patents on *all* inventions relating to kindred lines of business in which the employer is engaged, whether the inventions are conceived and invented on the employer's time or while the employe is in his own home, or elsewhere. The latter clause gives the employer important advantages, particularly for the reason that it may not be necessary for him to prove that the inventor actually did work on or perfected inventions on the employer's time, which is often very difficult to prove.

Citations of Law

It is interesting to know that the recent case of Standard Parts v. Peck, 264 U. S. 53, is the United States Supreme Court case which changed the old law so that now an employe who perfects an invention in the employer's plant, or while being paid by his employer, has no legal interest in the patent.

Therefore, at present an employe who is hired by either a gas corporation, or a municipality, to improve or perfect equipment, and obtains a patent on an invention, can gain nothing by contending that the employer's only interest in the patent consists in a "shopright" to make, sell, and use the invention. In fact the employe has absolutely no interest in the invention unless he proves that he perfected the invention while off duty or while he was not being paid by his employer. Obviously, if the employe perfects the invention at his home, the employer has no interest in the invention, providing no contract exists by the terms of which the employe agrees to assign to his employer all inventions, relevant to the employer's business.

Rights of Purchaser

A few years ago the law was established that the manufacturer of a patented device could sell it to gas corporations, and municipalities, and restrict or control the uses to which the patented device or equipment could be put. However, quite recently a higher court laid down new law to the effect that any firm or person who purchases a patented device may use it *as he sees fit*. In other words, the seller of a patented device cannot under new and modern law *restrict* the uses to which the purchaser of the article may put it. Therefore, a notification attached to or imprinted upon a patented device, which is intended to limit or restrict the uses of the patented articles, is illegal and of no effect.

Many sellers of patented equipment have attempted to avoid this law by selling patented equipment conditionally, and under special contracts. However, the courts look through any obscurity intended to avoid the established law that the purchaser of a patented article may use it as he desires and without any interference from the seller.

This is so because the higher courts have held that a contract of sale for patented equipment gives the purchaser exclusive rights and if the seller attempts to control future uses of the patented device he is violating the new law.

On the other hand, it must be remembered that if a patentee desires he may refuse to sell or permit others to use his invention. In one case (47 U. S. 146) the Supreme Court of the United States held that if a patentee sees fit, he may keep for himself the exclusive use and benefits of his invention or discovery. The grant of a patent is made upon the expectation that he will either put his invention to practical use or permit others to avail themselves of it upon reasonable terms, but he is not compelled to do so.

Rights Under License

While a gas corporation, or a municipality, may not be restricted as to uses of purchased patented equipment, this law is *not* applicable to license as royalty contracts. In other words, any person, firm or corporation which uses patented equipment or apparatus, under a license, is bound to abide by the exact terms of the license contract. In a license contract the patentee usually agrees to permit the other to use the invention for a specified period and for stipulated purposes. The patentee receives payment from the licensee in consideration of the rights granted.

Yet a license contract may be invalid and illegal for many reasons, and in one recent case (226 U. S. 20) the Supreme Court of the United States held that a licensed agreement is void by the terms of which a patentee endeavors to eliminate competition.

In another recent case (258 U. S. 451), the court held a license contract void because it contained a stipulation by which the user of patented equipment agreed not to use

devices made and sold by competitive manufacturers.

Moreover, lease or license contracts are void which are disguised contracts of sale. For illustration, a higher court recently held that a contract is void by which a licensee of gas plant equipment agreed to pay the seller monthly payments *with the privilege* of purchasing the equipment for an insignificant amount after the monthly payments totaled an amount equal or near the value of the equipment. A contract of this nature is held by modern courts to be legally a sale, although its terms are intended to change the legal status of the parties.

Gas Company Fails to Pay License Fee

At various times the following question has been presented the court: Is a gas company liable for infringement where it fails to pay the agreed license fee for using a patented invention?

It is well established by the decision in Luten v. MacAfee, 206 F. 176, that a licensee is not liable as an infringer under these circumstances, and that the licensor or seller can only sue to recover the amount due as a license fee, the same as any other debt.

The facts of this case are that a licensee refused to pay a patentee an agreed license fee for use of an invention for reinforcing buildings by means of iron and steel rods. The patentee sued the licensee for infringement, asking for a judgment in an amount equal to the damages and profits. The court held the licensee not liable, and said:

"It clearly appears that there has been no wrongful invasion or infraction of the plaintiff's (inventor's) rights under his Letters Patent. . . . The infringement of a patent is the unauthorized making, using, or selling of the invention during the life of the patent. There is no infringement where its use is authorized by the owner."

Another important point of law is that if a gas corporation, through officials, *offers* to purchase a patent, license right, or to advance money to obtain interest in a new invention, the corporation is bound to carefully carry out the terms of the agreement.

For illustration, in Buck v. Timmony, 78 F. 487, it was disclosed that a corporation offered to pay the expenses of obtaining a patent under the conditions that the inventor would assign certain rights in return. The inventor agreed to do so, provided the money was advanced within a specified time. The corporation did not advance the money as agreed, and the inventor refused to assign the patent rights. Later, the corporation sought to compel the inventor to fulfill the terms of the original contract. But the court held the inventor not bound to do so, and explained the law.

Wide Range Cylinder Volume or Cylindrical Tank Chart

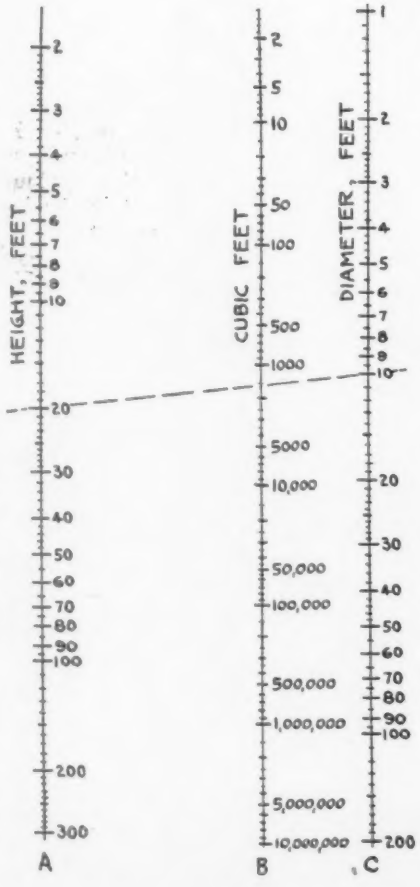
By
W. F. Schaphorst
Newark, N. J.

Here is a chart that will be found useful for determining the approximate number of cubic feet in any cylinder, cylindrical tank or gas holder from 1 to 200 ft. in diameter and 1 to 300 ft. in height. The capacities vary from 2 to 10,000,000 cu. ft.

Simply run a straight line across the chart connecting the height of the tank with its diameter and the intersection with column B gives the number of cubic feet instantly.

For example, if we have a tank 20 ft. in height and 10 ft. in diameter, what is its capacity? The dotted line drawn across the chart shows how it is done. Connect the 20 ft., column A, with the 10 ft., column C, and the intersection with column B gives the answer as a little over 1500 cu. ft. Figure it out with a lead pencil and it will be found that the correct answer is 1570 cu. ft.

In case it is desired to know the liquid or other contents of a given tank at a given time, column A represents the depth of the content in ft. and column C the diameter, as before. The figures in column B then represent the number of cubic feet in the tank.



The chart may also be used backwards for determining the height to which a given tank should be built or the diameter it should be given for a capacity of any number of cubic feet. Or, it may be used for determining the height to which a tank should be built where the capacity and diameter are both known. In other words, where any two of the factors are known the third is easily found.

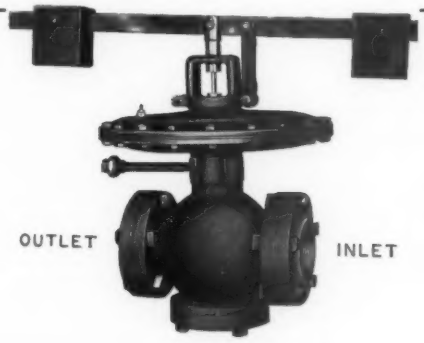
Morro Bay Gets Natural Gas Service

Through a new pipe line, completed in late October the Morro Bay California gas system becomes part of the 12,000 miles network of natural gas pipe lines of the Pacific Lighting Corporation system, which taps every important oil and gas field in California and which supplies every major population center in the state.

Over $50,000 was spent to bring the new service to this community, it is learned from R. E. Easton, president of the Santa Maria Gas Company, through whose facilities the natural gas supply now comes to Morro Bay. He officiated at a ceremony which marked the completion of the undertaking.

The new natural gas service supersedes the distribution of butane, which was started by the Santa Maria Gas Company in 1930.

Installation of the pipeline, which required approximately 60,000 feet of four inch pipe, was made by the C. C. Hartley construction firm of Avenal. Rigid tests were made of the entire system and all gas appliances in Morro were adjusted to the new fuel when natural gas was turned into the mains.



Fulton Weighted Illuminating Regulator

Works On Low Inlet Pressure

Where inlet pressures are extremely low or where the difference between inlet and outlet pressures is very slight, the Fulton Weighted Illuminating Regulator gives the most perfect control. Designed for either natural or manufactured gas. No stuffing box. Practically no friction. Highly sensitive. Write for Bulletin 2574 giving full information, also New Catalog of C-F Regulators for all requirements of pressure control.

The CHAPLIN-FULTON MFG. CO.

28-40 PENN AVE. CF PITTSBURGH, PA.

CURRAN-KNOWLES GAS AND COKE OVENS

Successfully carbonize Low Volatile, High Volatile, Swelling or Non-Swelling Coals.

Give a high yield of superior quality coke for water gas generator fuel, industrial and domestic use; a high yield of tar of excellent quality and a uniform quality of gas which meets Commission requirements.

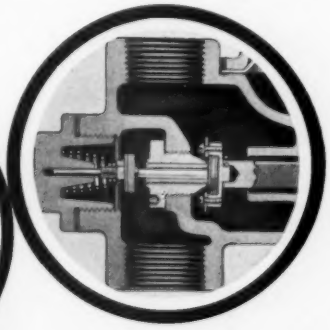
The Midwest Smokeless Fuel Co. Plant near Millstadt, Ill. Substantial construction. Low initial cost per M. capacity. Low operating cost due to simplicity of design. *Ask for bulletins showing plants and products.*

COAL CARBONIZING CO.

Bank of Commerce Bldg. St. Louis, Mo.

REYNOLDS NEW HOUSE SERVICE Regulator WITH AUTOMATIC GAS CUT-OFF and DIAPHRAGM OPERATED RELIEF VALVE!

☆ This No. 1 New Model 30 Regulator combines the tried and proven safety features of the original Little Giant and the newer Model 30, Little Giant, with an improved design which greatly increases its sensitivity. This Regulator has the automatic valve on the inlet side to shut off the gas in case of failure on the inlet line. It has a removable spring which permits the spring to be changed without taking off the top or disturbing the installation. Operation of the New Built-In Diaphragm operated Spring Adjusted Safety Valve is explained below. Complete operating details on request.



Normal breathing of Regulator is from Chamber "D" through port to "C". Operating pressure is in chambers "E" and "B". An increase in pressure above spring setting in diaphragm safety valve "F" raises diaphragm above chamber "B" releasing pressure through opening "C".

AUTOMATIC CUT-OFF WITH NEW SOFT SEAT

The pin extending through the center of the pressure spring permits easy resetting. With the new Soft Seat, it is easy to remove without taking the Regulator out of the line, which is impossible in the original Little Giant or the newer Model 30 Little Giant house Regulator.

BRANCH OFFICES:

422 Dwight Building, Kansas City, Missouri.

2nd Unit, Santa Fe Building, Dallas, Texas.

REPRESENTATIVES:

Eastern Appliance Company, Boston, Massachusetts.

Wm. A. Ehlers, No. 268 Park Street, Upper Montclair, N. J.

REYNOLDS Gas REGULATOR CO ANDERSON INDIANA U·S·A

GAS CONTROL SINCE 1892

The Blaw-Knox Cleaner Installation at Rutland, Vermont

By

S. F. McCallister

The Twin State Gas & Electric Co.

THE Blaw-Knox Cleaner is essentially a liquid scrubber and was developed primarily for the removal of dust and other suspended matter from natural gas transmission lines by washing the gas with oil.

Experience has shown, however, that the principle of operation makes it well adapted for a place in the manufactured gas plant. It is especially applicable to the smaller works, since its operation is simple and practically automatic, capital investment is small, and, if gas oil is used as a scrubbing medium, operating costs are low, as the oil can later be used in the water gas carburetor.

In design it is of welded construction, of cylindrical form, with a small diameter in relation to its length. The shell is erected in a vertical position, and the interior is divided into four compartments by means of three horizontal steel diaphragm plates. The lower section, which is about one third of the total height, is the reservoir. It is filled with the scrubbing oil to a point about 14 inches below the first diaphragm plate. Gas inlet is on the side immediately above the oil.

So-called contactor tubes, about 3 inches in diameter, are supported by the diaphragm plate and extend down into the oil for a distance which is determined by the level of the oil overflow. The upper ends of these tubes continue into the next compartment above and form the only entrance to this compartment.

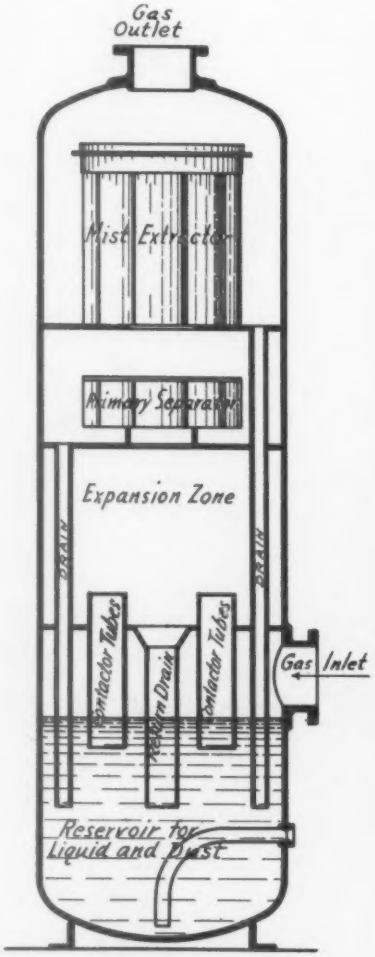
The second compartment extends to a point a little more than half of the height of the shell, where it is ended by the second diaphragm plate. The space between the two plates serves as an expansion zone; and a drain tube sealed below the oil, allows surplus oil carried into this section to drain back to the reservoir.

There is only one opening in the second diaphragm plate. This is in the center of the plate and leads to the primary liquid separator located in the third compartment immediately above. This separator is of the centrifugal type and serves to remove all heavy liquid particles. The separator is comparatively short, as is the compartment in which it is contained.

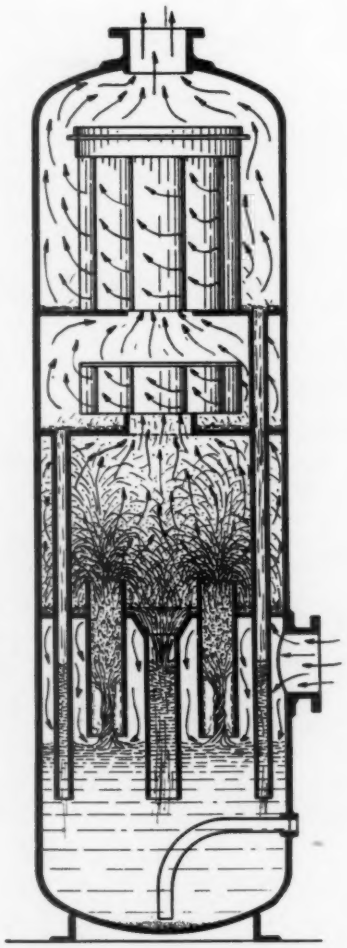
The third diaphragm plate, located about one third of the way down from the top of the shell, separates the last compartment from that of the primary separator. Its only opening is also in the center and leads to a mist extractor, which is similar in design to the liquid separator but much taller. This is a low velocity contact-surface type separator and its function is to cause the moist gas to pass over a large amount of wet surface to which fine particles will adhere and drain away.

Drain tubes run from both the liquid separator and mist extractor compartments down thru the sections below, and seal in the oil in the reservoir. Gas outlet is in the top of the shell directly above the mist extractor.

When gas, under pressure, is admitted to the space between the top of the oil and the first diaphragm plate, the oil level is depressed in the reservoir and raised in the contactor tubes. With the continuation of pressure the seal eventually breaks and gas rushes up the tubes, carrying



Blaw-Knox Gas Cleaner Unit filled with oil, ready to go to work.



Extreme turbulence insures thorough washing.

Presented before New England Gas Association, Operating Division, November 3rd, 1939.

with it a certain amount of the oil. The aspirated column of oil flares out at the bottom of the tube and a highly turbulent zone of oil and gas continues to the top of the tubes. Excess oil draining back down the sides of the tube is whirled across the tube, setting up a screen of oil across the bottom of the tube thru which the gas must pass. An intimate contact is made between the gas and oil while in the turbulent zone and continues to the extractors. The action is automatic, continuous, and oil flow is proportional to the flow of gas.

Surplus oil carried up the tubes into the expansion zone drops out and drains back to the reservoir, and oil that is entrained with the gas is removed by the liquid separator and mist extractor and returned to the reservoir.

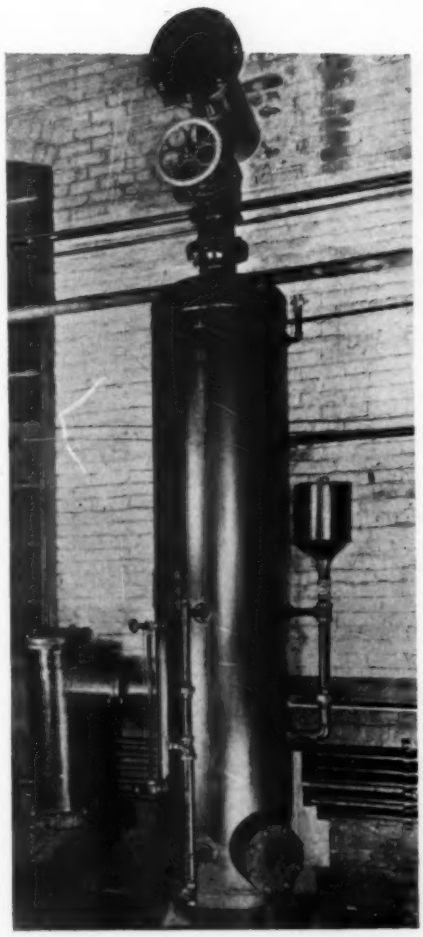
In the original application, for removal of dust, the principle is that of covering the dust particles with oil, and consequent removal of the oil together with the dust which settles to the bottom of the reservoir.

In manufactured gas plants the utility of this type of scrubber is rather in the removal of fine oil mists, tar-fog, and entrained water, in addition to which the oil scrubbing removes naphthalene and liquid phase gum formers. The very efficient liquid and mist extractors, together with the intimate contact of scrubbing oil with the gas, make this equipment almost ideal for these purposes.

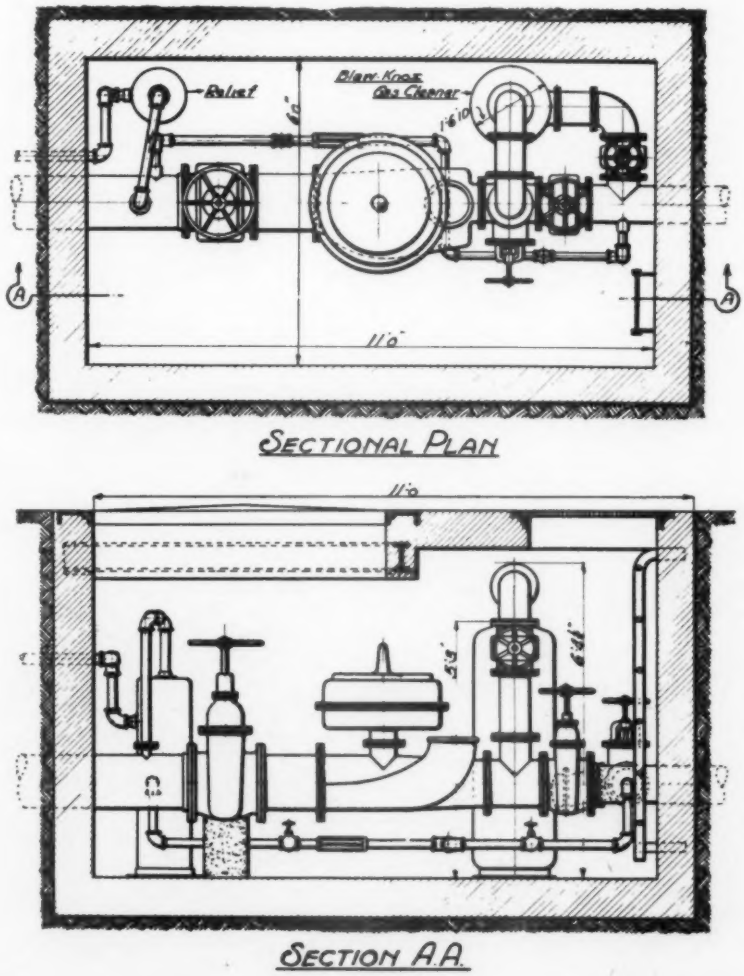
Situation Prior to Cleaner Installation

Now as to the experience at Rutland. The property at Rutland, Vermont, consists of a water gas plant of fairly recent design, most of the plant having been installed within the last ten years. The gas cleaning plant consists of a washer cooler, P. & A. tar extractor, and a multiple tar washer, followed by dry purifiers. Output is about 275 MCF per day, and bituminous coal is used for generator fuel 100%.

Like most of the smaller plants, there are no facilities for elaborate chemical or physical tests; and it is to be realized that such findings as are mentioned in the following are not generally the results of such tests, but are the observations and conclusions of the operating staff.



The Cleaner at Rutland, Vt.



An underground vault installation on the intermediate pressure system. Showing installation of a Blaw-Knox Gas Cleaner to protect the regulator and customers on low pressure distribution.

Prior to the building of the water gas plant, the process used was coal gas. In 1936, after the water gas plant had been in operation about four years, it became increasingly evident that it would be necessary to take steps to improve the conditioning of the gas. This problem mainly manifested itself in two conditions.

First: An excess of tar fog reaching the purifiers, with consequent contamination of the oxide and shortening of its life.

Second: An undesirable number of pilot outages, evidently caused by liquid phase gums.

Secondary problems were, an increase in the amount of unaccounted-for gas, which had jumped sharply with the introduction of water gas, and considerable trouble from service pipe freeze-ups in the winter months.

Since an extremely small relief

holder was being used it was felt that perhaps a lower rate of flow thru the cleaning plant might help. Accordingly one of the storage holders was converted into a relief holder; and while this did help some, it by no means solved the problem. Other means were considered, but all required the installation of expensive equipment.

Operating Division Papers Aid

At about this time Mr. Dowling and Mr. Judd presented papers before this Section on the Blaw-Knox installations at New London and Waterbury, and the optimistic reports which they made led us to investigate this equipment.

It was found that capital investment was relatively small, and feeling that the installation would be worth while, if only to remove the tar-fog, (altho we hoped to remove liquid phase gum formers) arrangements were made and the cleaner installed in October 1937.

The cleaner was installed by our own men and was set up indoors and located immediately ahead of the purifiers.

It consists of a shell 24″ in diameter and 10′ 4″ high. Maximum capacity is rated at 50,000 of standard gas per hour. The reservoir holds about 50 gals of gas oil which is the medium used for scrubbing. In operation the temperataure of the gas at the cleaner averages 75 to 80 degrees F. Pressure loss thru the scrubber at the average flow rate of 20,000 cf. per hour is very small.

The cleaner has now been in service for two years and the results have been very satisfactory. The tar-fog which had formerly been carried into the purifiers is now being eliminated to the extent that no tar is ever found on the purifying material when the boxes are emptied.

We have no way of knowing definitely just what is the performance as regards the removal of liquid phase gums, but we do know that troubles from this source have greatly reduced. Pilot outages in the last two months of 1937, after the cleaner was put in operation, averaged but 30% of the average of the previous 10 months, without cleaner. Pilot outages in 1938 were less than 45% of those reported in 1937 and to date in 1939 there have been no pilot outages that can be traced to liquid phase gums.

Pilot Outages Remedied

In this connection it might be mentioned that the pilot outages which occurred in 1938 are shown by the records to have mostly occurred at a time when there was trouble with the operation of the purifying boxes. We believe that these stoppages were the result of nitric oxide acting on vapor phase gum formers. This NO would have normally been removed by the purifiers, but under the conditions of operation was not removed. This theory is substantiated by the fact that when the purifiers were again operating normally the troubles ceased.

A 60-inch unit Gas Cleaner installed five years ago—it handles 26,000,000 cubic feet per day.

An interesting experience in one of our smaller plants occurred this year, which seems to bear out this conclusion. In this plant the purifying equipment consists of two boxes. In the past, whenever a box was changed and only one box left on the line, trouble has almost always been experienced with gum stoppages in pilots. This spring it was necessary to change a box; and due to circumstances, coke instead of coal was used for generator fuel at the time the box was off. No gum troubles were experienced. However, when changing the other box, later in the summer, coal was being used and the gum troubles did appear.

Single unit installation.

Our conclusions in this matter were that the trouble was caused by NO present in the gas and normally removed by the purifiers, but not removed when only one box was in use. It was felt that coke operation, in which no blow-run is used, either does not produce the NO or does so in such limited amounts that one box can remove them. Unfortunately we have no chemical proof that this is so. We have no indicators for NO and no tests were made to determine if the gums encountered were vapor phase. In the small plant we frequently have to take things for granted and can only view our experience in the light of what has been done elsewhere on the subject.

In Rutland at the time of increased pilot outages in 1938 coal was being used for generator fuel, and we know that the purifiers were not functioning up to standard.

Previous to the installation of the cleaner, there had been naphthalene troubles from time to time. These were never serious and were indicated by deposits in the station meter and an occasional service pipe stoppage from this cause. The plant was undoubtedly producing some naphthalene but not in amounts to cause real trouble. In the two years since the cleaner was put to work there has been no evidence of naphthalene at the station meter or in any of the service pipes. It would therefore appear that the cleaner is effective in the removal of naphthalene in the amounts produced at Rutland.

No effect has been noted on the

BTU of the gas by reason of the oil scrubbing. BTU at this plant is controlled by a Cutler-Hammer Thermeter and no increase in oil per M has been required since the installation.

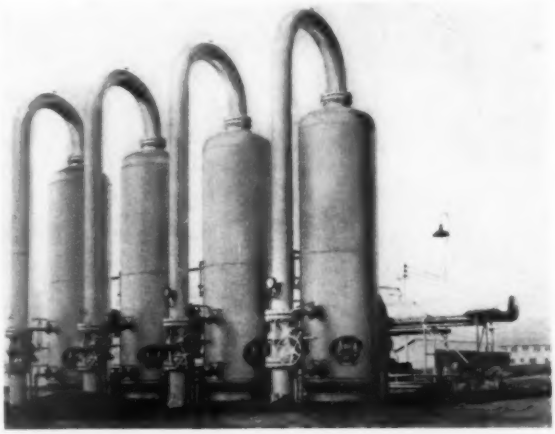
Unaccounted-For Gas Decreases

Since the installation of the Cleaner there has been a marked decrease in the volume of unaccounted-for gas. This decrease has been accompanied by a decrease in the amount of drippage found in the street main drip pots and a change in its character from a thin oily consistency to a more heavy bodied appearance. We believe that considerable condensable vapors and particles of water in suspension were going thru the station meter and recording as gas. These dropped out before reaching the customers' meters and increased the unaccounted-for figure. Since holder capacity in relation to daily send-out is small there was not enough time for them to drop out in the holder and they were carried to the street drips.

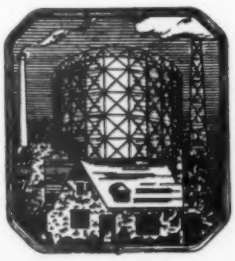
Tar camera tests at the inlet of the cleaner indicate that there is some tar vapors and considerable water in suspension being carried into it. Tests on the outlet show no tar-fog and a fairly dry gas. There is no appreciable carry-over of the scrubbing oil.

A test was run for a two weeks' period when no oil was added to the reservoir, and a record made of the amount of liquid from the overflow. In this period approximately five million Cu. Ft. of gas was passed and 89 gallons of a very frothy emulsion were obtained from the overflow. This emulsion consisted of tar, water and oil. It is obvious that without the cleaner this would have been carried into the purifiers or beyond.

Mention has been made of the problem of service pipe freeze-ups. Winters are severe in Rutland and the small storage capacity means that the gas frequently goes into the distribution system before cooling to the low temperature of the ground. We cannot report positively that the cleaner has resulted in any help in this direction. We do know that it is removing practically all of the moisture that formerly went to the purifiers, but whether this dropped out in the purifiers in the winter months we do not know. Any observations on this score are complicated by the fact that for the past two winters use has been made of a commercially supplied liquid which is vaporized into the gas stream at the holder outlet at such times as the temperatures warrant. Results from this have been very gratifying. Frozen service pipes, in the first three months of 1937, when it was first used were but 10% of the corresponding period of 1936, altho the weather was about the same.



Large four unit installation at a mid-western gas plant.



Summary

After two years use of the cleaner the experience at Rutland indicates that it is a thoroughly satisfactory device for the removal of tar-fog, oil vapors, excess moisture and naphthalene. While the evidence is not conclusive it is believed that it will remove practically all of the liquid phase gum formers but its effect on those of vapor phase is questionable. Its installation in the small plant makes a simple method of gas conditioning available at a small capital investment, with no complicated process of operation or increase in operating costs.

GAS SERVICE STOPS

SINCE 1869 Hays has built dependable brass products for the Gas Industry. Standard, Special Weight, Heavy Pattern and High Pressure Stops to meet all requirements are manufactured by Hays in a full range of sizes. Write for Catalog No. 4 today.

HAYS MANUFACTURING CO. ERIE, PA.

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STEEL PLATE CONSTRUCTION

AMBLER, PA.

GAS HOLDERS

HOLDER INSPECTION

RIVETED OR WELDED FABRICATION & ERECTION

TANKS, BINS, FLUES PURIFIERS, WELDINGS

This Warranty Sells Gas Ranges

By
Fred E. Kunkel
Washington, D. C.

When you have to buck cheap electric rates, such as TVA, it is difficult to sell a gas range as against an electric range, yet when the service angle is considered it is not so hard to meet competition.

This the Knoxville Gas Company in Knoxville, Tenn., discovered when it introduced a modern gas range warranty form, in which for the sum of $1.50 they agree to furnish for the next five years free of charge any part or parts of a gas range requiring replacement incidental to normal and customary use (accident and misuse excepted), together with the necessary labor of installing the same.

MODERN GAS RANGE No. 469

WARRANTY

For the sum of one dollar and fifty cents ($1.50), receipt of which is hereby acknowledged, The Knoxville Gas Company agrees to furnish to _____ for FIVE CONSECUTIVE YEARS from date hereof, FREE OF CHARGE, any part or parts of the gas range described herein, requiring replacement incident to normal and customary use (accident and misuse excepted), together with the labor necessary to install same. In no case does this Warranty apply to enamel or other finish on any part of the range. In case the customer permits or causes any changes to be made or adds any devices or accessories to the range without first securing endorsement upon this Warranty authorizing same, our responsibility under this bond ceases. The gas range herein described is designed for and this Warranty is only applicable to private family use of said range by gas customers of The Knoxville Gas Company. This Warranty is made only to the party hereinabove named, is not transferable, and is applicable to one _____ gas range, model number _____, serial number _____ purchased from us on contract dated _____

Signed
THE KNOXVILLE GAS COMPANY

_____ By _____
Date Secretary

This idea acted as an entering wedge into the customer's thoughts when buying, and frequently swings the decision in favor of a gas range. Thus they got before the public the comparative cost of maintaining competitive equipment for cooking—oil stove, coal stove, or electric range.

If you burn oil you have wicks, chimneys and valves to replace and you also encounter the hazard of the fuel. Coal is an uncontrollable fuel. You might only pay $5 a ton for coal, but that is the start. You have dirt on drapes, removing of the ashes, and the odor to contend with.

So if the gas company runs into a situation where it is claimed that gas is costly, or a few cents more per day than electricity, they can start to evaluate these things, plus the fact that you can get better performance, savings in food, prevention of spoilage, etc., the things that are really intangible to the average layman, and if you can get that customer to sit down and talk to him logically, you can get him to put a value on them.

All right, if those things are worth a dollar a month, or $12 a year, why worry about gas costing 15c more a week than electricity. Contrast that with $60 more to be spent in maintenance. You practically pay for a gas range in that time. And the performance you have had out of gas in the meantime is so much better.

So in order to show the customer the high cost of other appliances, they brought out this warranty. The salesman can say this, "We will agree with you when you buy this range to maintain it, all parts and pieces and everything for $1.50 for five years. This is equivalent to personal assurance of lower maintenance costs. We will give you that certificate, maintaining it for five years at a cost of 30c a year. You'll have to go a long way to beat that."

This argument naturally registers very strongly with any one.

Another argument used in the sale of a range is that the company installs every range on four so-called features: (1) Insulated fully; (2) Enamelled inside and out; (3) Automatic top burning lighting; (4) Automatic oven heat regulation.

Incidentally ninety-five per cent of the range replacements and sales in Knoxville have been with this type of oven, and since the inception of the C.P. Program in August, 1938, fifty-seven per cent of the sales have been C.P. ranges.

Thus if any customer says he is going electric, it is easy to say, "Well they will never give you anything like this (warranty). Ask them how much they will charge to maintain your electric range. This points out definitely what we will do and what we won't do."

Then there is also the M.C. Life-Time Burner Guarantee—a gas burner won't burn out—electric elements do.

George D. Watrous Serves 50 Years as New Haven Director

On November 5, 1889, George D. Watrous was elected a director of the New Haven Gas Light Company, "to serve for the remainder of the current year." On November 5, 1939, he received congratulations on the completion of 50 years of service as a director of the company. Mr. Watrous has also been a vice-president of the company since January 3, 1911.

Porcelain Coated Hot Water Tanks

Porcelain Steels Inc. of Cleveland announces a scientifically designed and tested hot-water tank, coated inside and outside with porcelain enamels. These enamels were recently developed for this purpose by Ferro Enamel Corp. They are tough and elastic enamels, capable of withstanding the severe punishment of hot water under pressure and the corrosive action of hot water.

The tanks are welded on a special machine developed and manufactured by Federal Machine and Welder Corp. This machine weighs 30,000 pounds and it is capable of producing a longitudinal weld of tanks up to 60 inches in 9 seconds. The weld is made in such a manner that the seam is practically impossible to detect after the enamel is applied.

Furthermore, it is claimed the welding doesn't fatigue the metal or create strain, and has no foreign metal in it. This means that the porcelain enamel will adhere faithfully to the weld.

This new tank will be priced within the buying power of the most modest home, will not rust, and can be had in colors with a neutral pastel gray featured.

The estimated replacement of rusted out hot water tanks is about 1,000,000 a year. The new porcelain enameled tank will secure freedom from frequent tank replacements, and rusty water.

Donald D. Smith is president of Porcelain Steels, Inc. Manager of the plant which is at Cedar and Ashland Road, Cleveland, is C. E. Murphy.

Old Gas Lamp Post in Atlanta Becomes a Memorial

WITH the lighting on Dec. 14th of the "Light to the Confederacy,'" the Atlanta Gas Light Company contributed an interesting feature to the city's "Gone With the Wind" celebration and presented the people of the community with what is probably the world's most unusual memorial.

For the "Light to the Confederacy" consists of one of the city's original lamp posts, erected in 1855, which has remained in place for a period of 84 years and which, restored and again supplied with gas, will burn continuously as a memorial to the city's heroic defenders in the War Between the States.

From the gas man's stand-point, the light might be said to be equally symbolic of the 84 years of service which the gas company has rendered its community. For, even when the plant was damaged by Sherman's shells, it continued in operation. Gas lights burned throughout the occupation of the city. And it was not until the Union forces left the city and the plant was deliberately destroyed that gas lights failed.

Even then the plant was repaired within two years after Sherman left the city . . . and service has been uninterrupted from that day to this.

But let's get back to the story.

As early as March, 1853 . . . fifteen years before the establishment of the State Capital in Atlanta . . . the question of lighting the city streets had come before the city fathers.

At that time, a number of oil lamps had been placed where citizens had agreed to keep them filled, trimmed and lighted at night. These were not found to be entirely satisfactory, and in 1854 Messrs. Perdieu and Hoyt offered to install a gas plant for lighting purposes. But it was not until one year later when William Helme, of Philadelphia, visited Atlanta and made several appearances before the city council that gas lights were finally installed.

Mr. Helme proposed to erect a coal gas works and lay down pipes in the streets, the city giving him the exclusive privilege of lighting the streets for a period of fifty years. For its part, the city would secure and erect fifty lamp posts, pay thirty dollars apiece to the gas company

each year for lighting them, take $20,000 of the company's stock, paying for the same in bonds bearing 7% interest, and not tax the property of the gas company.

A committee from the city council "sounded out" the leading citizens and reported them as being almost unanimously in favor of the proposition.

So the contract was signed.

Mr. Helme and his company began the construction of a $50,000 gas plant "capable of producing 20,000 cubic feet of gas every twenty-four hours."

The city, in its turn, ordered 50 "ornamental lamp posts, complete with lamps and burners" from John S. and Joshua Schofield, proprietors of the famous Schofield Iron Works in Macon, Ga. They cost, incidentally, $21.00 apiece. And on Christmas Day, 1855, the new gas lights were turned on for the first time. The celebration was almost equal to that of "Gone With the Wind."

For nine years the lights gave satisfactory service. Then Sherman laid siege to the city.

On August 9, 1864, after having shelled the city with lighter and less effective artillery, Sherman brought up a battery of Parrott cannon . . . the "Big Berthas" of the War Between the States . . . and an air raid could not have been more disastrous. Scarcely a building on Alabama or Whitehall streets escaped serious damage. Superintendent Warner, of the gas works, and his six-year-old daughter were killed by a shell in a building where they had taken refuge. A shell, striking a lamp post at the corner of Alabama and Whitehall streets, killed one man . . . a barber named Sol Luckie . . . and injured several others.

And that lamp post holds the memorial light which has just been dedicated.

Repaired and put back in place when Atlanta began its rebuilding program after the war . . . the marks left by the shell can still be plainly seen . . . it has remained in its original position for a period of seventy-five years.

It has seen the historic struggle

between gas and electricity for street lighting . . . and remained in place, even when electricity won that battle. It has watched the construction of the Whitehall viaduct and later of the Alabama, Pryor and Wall street viaduct system, albeit it was "lifted" several feet from its old location to find place in the new arrangement. It was carefully protected during the construction of the Atlanta National Bank on its corner. And there it will remain.

Some years ago, the Old Guard of Atlanta, together with the Atlanta Chapter of the United Daughters of the Confederacy, made the old lamp post a memorial to the late Col. A. J. West, beloved Confederate veteran and citizen of Atlanta. A bronze plaque testifies to this and gives something of the old post's history. It is retained in the restored post, being placed lower down for better readability.

But with its restoration, the lamp post is all this and more . . . a memorial to all those who fought in the Battle of Atlanta and a symbol of the service given by the city's oldest public utility corporation . . . its gas company.

Restoration of the historic lamp post to its original form was not without a considerable amount of research work. In order to find out just what the post looked like . . . for the shade and burner had long since disappeared . . . workers pored over old drawings, sought detailed descriptions and haunted the city's antique shops. But the present post is exactly as it appeared . . . barring the scars of battle . . . when it was received from the Schofield Iron Works and proudly put in place.

Nor was the restoration without some hard physical work, for workers had to cut through solid concrete to restore a gas connection for the light.

But . . .

For the gas company it has been work well worth the doing.

It has had the opportunity to perform a unique public service for Atlanta and, in so doing, to remind the public of a service which even an invasion and burning of the city could not interrupt for long.

Hutchinson Gas Club

The Hutchinson Gas Club is an outgrowth from a group of gas engineers who have been meeting monthly in New York at lunch time.

Out of respect for the late Mr. W. P. Hutchinson, former president of the Sprague Meter Company, who died May 21, 1939, this group is known as the Hutchinson Gas Club. Mr. Hutchinson was always an ardent member of this group and seldom failed to come to New York especially to meet the group, among whom he was always most popular.

Left to Right (Seated): Walter C. Beckjord, President, American Gas Association: J. R. Wohrley, Electric Advisers, Inc.; C. R. Bellamy, Columbia Gas & Electric Corp.; Ray Ranson, Pan Handle Eastern Pipe Line Co.; E. J. Murphy, Brooklyn Union Gas Co., Bklyn., N. Y.; L. O. Gordon, Federal Water Service Corp.; Elliott Taylor, "Gas"; Ross Holmes, New York Public Service Commission; R. Van Vliet, New York & Richmond Gas Co.; Fred B. Parke, Brooklyn Union Gas Co.; A. B. Huyck, Brooklyn Union Gas Co.; S. P. Cobb, Ebasco Services, Inc.

Left to Right (Standing): Floyd Parsons, "Gas Age"; F. L. Fairchild, Sprague Meter Co.; John D. Alden, Jersey Central Power & Light Co.; A. I. Phillips, "American Gas Journal"; Alan Lockwood, Penn Western Service Corp.: Harold L. Gaidry, New Orleans Public Service Inc.; Oliver Hagerman, Atlantic Seaboard Corp. (Present but not in picture, A. Gordon King, American Gas Association) who took the photograph.

New Handbook on Gas Engines

The Handbook on Gas Engines prepared by the Gas Engine Power Committee of the industrial Gas Section of the American Gas Association, is a 58 page reference work that every industrial gas department of gas utilities should have on file.

The new handbook includes data and information collected over a period of years by Mr. C. Remschel, of the Southern Counties Gas Company of California, who is the author of much of its contents.

Beginning with the early history of gas engine practice, it covers many features an industrial gas man should know about gas engines and points out the way to increased gas sales through their use.

This book will help towards gaining first-hand knowledge of gas engines, their application, their cost of operation, and their economy. It will help gas companies to get more of this kind of business, and should be available to every industrial gas man. Copies may be obtained at one dollar each by writing the American Gas Association, 420 Lexington Avenue, New York City, N. Y.

C. P. Range Boosts

Certified Range owners gave the following report, when asked for their opinion as to how the C. P. range compared with their former gas range.

1. Do you find top burners faster? 79% said yes.
2. Do you find top burners easier to clean? 95% said yes.
3. Do you like simmer burners? 93% said yes.
4. Do you have fewer boilovers and less cleaning? 58% said yes.
5. Do you use the broiler more in the new range? 61% said yes.
6. Do you bake more in the new range? 65% said yes.
7. Do you use low temperature for roasting? 70% said yes.
8. When using low temperature, did you notice less shrinkage in the meat? 74% said yes.

C. P. Ranges make "Yes boosters" out of owners.

—*"Cubic Feet," Dec., 1939 New Haven Gas Light Co.*

A. G. A. Industrial Section Organizes "Horizontal" Sales Committee to Assist Industrial Managers

A new committee of the A.G.A. Industrial Gas Section, the *General Sales Committee*, held its first organizational meeting at the Hotel Commodore, New York, December 4, and set for itself objectives and 1940 assignments, distinctly different from those heretofore tackled by any committee of the Section. The new Committee's interest will be entirely "horizontal" (rather than specialized or "vertical", and directed at one specific aspect of the gas-for-business-purposes market). It will stick to broad non-residential gas sales angles, and attempt to report its findings in a form such that the top men of the industry can digest them in a minimum of time, with general company policy in mind, and without going into technical detail and long case history records.

The two specific objectives decided upon were: (1) to evaluate fully the industrial load (and the direction in which it is heading) so that for the first time complete national information will be available on the basis of which to interpret local non-residential gas sales situations, and (2) to give the non-residential sales manager facts and suggestions useful in planning his activities in joint council with management. Subcommittees were appointed to develop a suggested form of questionnaire to use in accomplishing the evaluation, to devise means of standardizing and summarizing the sales "meat" in the reports of all other committees of the Section, (constantly working on special phases of the industrial gas sales problem), and to assemble ideas and case histories of successful ventures in general educational and promotional work in the industrial gas field.

H. Carl Wolf, President, Atlanta Gas Light Company, Atlanta, Georgia, chairmans the new General Sales Committee, and its "blue-ribbon" membership is made up of industry executives and captains of non-residential gas sales activity from various sections of the country.

Subsequent to the first meeting of Mr. Wolf's new group, the Managing Committee of the Industrial Gas Section, on December 5, reviewed the General Sales Committee's decisions and wholeheartedly endorsed its proposed plan of action.

Personnel of A.G.A. Industrial Gas Section General Sales Committee:

H. Carl Wolf, *Chairman*, Atlanta Gas Light Co., Atlanta, Ga.
Frank H. Adams, Surface Combustion Corporation, Toledo, O.
F. T. Brooks, Philadelphia Electric Co., Philadelphia, Pa.
F. Marion Chelf, Public Service Co. of Colorado, Denver, Colo.
George Duane, The Dayton Power & Light Co., Dayton, Ohio.
Bernard T. Franck, Milwaukee Gas Light Co., Milwaukee, Wisconsin.
C. F. Henness, Public Service Co. of Northern Illinois, Chicago, Ill.
W. M. Jacobs, Southern California Gas Co., Los Angeles, Calif.
R. A. Malony, The Bridgeport Gas Light Co., Bridgeport, Conn.
Christy Payne, Jr., The Peoples Natural Gas Co., Pittsburgh, Pa.
E. L. Stauffer, South Carolina Power Co., Charleston, S. C.
Louis Stein, Northern States Power Co., Minneapolis, Minn.
John J. Winn, Jr., Portland Gas & Coke Co., Portland, Oregon.
Charles G. Young, Springfield Gas Light Co., Springfield, Mass.
K. A. Scharbau, Eclipse Fuel Engineering Co., Rockford, Ill., (Representative—A.G.A.E.M.).
George F. B. Owens, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Streuby L. Drummn, New Orleans Public Service, Inc., New Orleans, La.
Eugene D. Milener, American Gas Association, New York, *Secretary*.

Welding Electrodes. Stainless steel electrodes covering all chemical analyses—claimed by the manufacturer to be an advancement in uniform, high-quality weld deposits are described by The McKay Company, Pittsburgh, Pa., and York, Pa., in a new 16 page booklet. Each package of electrodes contains a certification of weld deposit analysis rather than the wire analysis which has been the practice of manufacturers in the past.

Winter Air Conditioning Forced Warm-Air Heating

Based primarily on results of research at the University of Illinois, as published in University of Illinois Engineering Experiment Station Bulletin No. 266. Includes supplemental data from other sources.

Edited by S. KONZO

Special Research Assistant Professor in Mechanical Engineering, University of Illinois; Member A.S.H.V.E. and Honorary Member National Warm Air Heating and Air Conditioning Association.

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5 Comfort Chart and Effective Temperatures
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29 Special Modified Forms of Duct Design
30 Selection of Furnaces and Burners
31 Furnace Capacities and Efficiencies
32 Chimneys and Draft
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One of many effective newspaper advertisements used by Ohio Fuel Gas Company of Columbus. Original 4 column, 12 inches high.

Book Reviews

Engineering Materials, by Alfred H. White, Chairman of the Department of Chemical and Metallurgical Engineering, University of Michigan. McGraw-Hill Book Company, Inc., 1939; 557 pages; price $4.50.

Few branches of technical development have gone forward more rapidly during the past 20 years than that embracing the broad field of Engineering Materials. For example, the simple conception of steel held by the past generation has been complicated by considerations of grain size, hardenability, and heat treatment, and the many varieties of alloy steels, have multiplied the materials that are available. The Portland cement of a few years ago is now obtainable in several specialized varieties. Paints and protective coatings have been greatly multiplied in number and effectiveness. Light alloys and plastics have provided an entirely new field of materials from which the engineer may draw.

Prof. White has discussed all of this in his book on Engineering Materials in clear and simple language, readily understood by anyone with an elementary knowledge of chemistry.

After an Introduction covering basic theory, twelve chapters are devoted to iron and steel and their alloys. Three chapters contain information on copper, nickel, zinc, tin, aluminum, magnesium and lead, and their various alloys, including solders and bearing metals. Another four chapters cover clays, silicates, refractories, cements, etc. The relatively new, but rapidly expanding field of plastics and resins is also thoroughly discussed.

Of particular interest to the gas industry are the following chapters:

Corrosion of Metals and Protection by Metallic Coatings,—Fuels and Combustion,—Water and Its Industrial Utilization (Boiler Feed Water and Its Treatment),—Organic Preservative Metals and Protective Coatings.

Fluid Flow Measurement by Head Type Metering Elements, by F. C. Stewart and J. S. Doolittle of The Pennsylvania State College. Copyright 1939, by the Instruments Publishing Company, Pittsburgh, Pa. 26 pages. Price 50c.

This is a highly technical, but well-written thesis on fluid flow through Venturi tubes, orifices, nozzles and Pitot tubes. The flows of both liquids and gases and their measurement by the above-mentioned instruments is discussed. The practical examples given to illustrate basic theory are valuable.

This pamphlet should be in the hands of all those in the gas industry who are in any way interested in flow measurement from a theoretical standpoint.

Col. Bishop Heads Consumers Gas of Toronto

Col. A. L. Bishop, 44, was elected president of the Consumers' Gas Co., Toronto, Ontario, at a recent meeting of directors. Col. Bishop, a director of the company for the past year, succeeds Thomas Bradshaw, who died on November 10th. The late President, Mr. Bradshaw, who died at his residence, 3 Parkwood avenue, in his seventy-first year, was also president of the North American Life Assurance Co. since 1928, and Commissioner of Finance for the City of Toronto during the days of the last war.

434 Installations

prove the ability of Glover-West carbonizing plants to produce gas at low cost and also make a highly reactive coke ideal for the domestic market. The tar has low water content and viscosity excellent for road material.

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New Equipment and Appliances

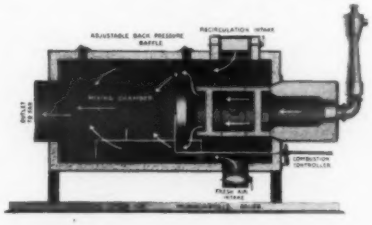
Simplex Pipe Puller

Templeton, Kenly & Company, 1020 S. Central Avenue, Chicago, have introduced a new device designed for pipe pulling known as the Simplex #5950 Service Pipe Puller.

One unit handles 1", 1¼" or 1½" pipe depending upon the size of wedge clamp used. Bulletin, U-40, describes the operation.

Gas Fired Air Heater

The Despatch Direct Gas Fired Air Heater is a recirculating air heater with "Controlled Combustion," an exclusive Despatch feature, that eliminates odors due to



unburned gases or improper combustion.

It is claimed to improve oven, dryer, or furnace performance, eliminate fouled finishes and rejects, lower operating costs and greatly increase utility and flexibility.

It is a novel back-pressure baffle arrangement having maximum operating efficiency at all times by a simple twist of a convenient adjusting dial.

Full description in Bulletin 72 of Despatch Oven Co., Minneapolis, Minn.

Republic Humidifier

The Autogas Corporation of Chicago announce the production of

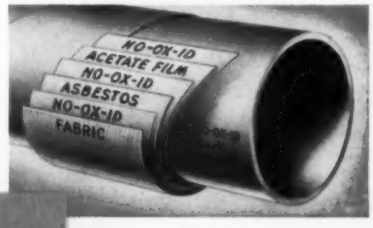
5,000 B.t.u. per hour input. Model 1180 is rated up to 11 gallons, with 8,000 B.t.u. per hour input. The evaporator is a rugged casting, heavily galvanized inside and out, the other surface being finned to develop a high rate of heat transfer to the air which is drawn through the humidifier.

The cabinet measures 8" deep, 15" wide and 25" high with a total shipping weight of 80 lbs. The finish is an attractive two-one crystalline surface.

New circular with complete description may be had by addressing the Autogas Corporation, 2258 Diversey Avenue, Chicago.

Pipe Line Wrapper

An improved asbestos wrapper for protecting underground pipe lines against physical and chemical action has been developed by the Dearborn Chemical Company.



new product—NO-OX-IDized ced Asbestos Wrapper—has tensile strength, dielectric h, and moisture resisting ies than other asbestos ers, but is pliable enough to pipe joints and other irregu- faces without cracking. detailed information, write rn Chemical Company, 310 higan Ave., Chicago, Ill.

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This and other valve models, as well as pressure gauges are described in Catalog 600.

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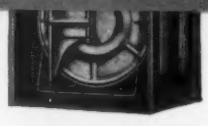

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Simplex Pipe Puller

This unit greatly facilitates service pipe renewals as it is only necessary to dig a short trench the length of a section of pipe. Damage to streets, walks and lawns is eliminated. Public relations and safety are greatly improved.

Two jacking mechanisms are employed:—a ratchet operated screw jack and a lever jack with pawl and rack to "back-out" the pipe. Pipe is gripped firmly with an early installed wedge clamp which holds without crimping or bending pipe.

One unit handles 1", 1¼" or 1½" pipe depending upon the size of wedge clamp used. Bulletin, U-40, describes the operation.

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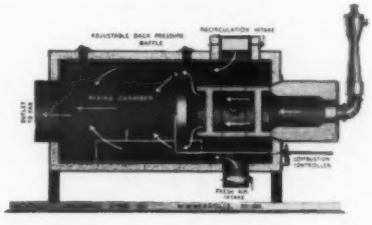

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The Autogas Corporation of Chicago announce the production of the Republic Humidifier, self-contained unit using gas as a fuel and equipped with its own controls.

It may be used as an adjunct to a gravity heating system on a forced circulation warm-air system.

This humidifier may either be supported on a shelf or suspended at appropriate location to the heating system. Model 750 is rated up to 7 gallons of water a day, with a

5,000 B.t.u. per hour input. Model 1180 is rated up to 11 gallons, with 8,000 B.t.u. per hour input. The evaporator is a rugged casting, heavily galvanized inside and out, the other surface being finned to develop a high rate of heat transfer to the air which is drawn through the humidifier.

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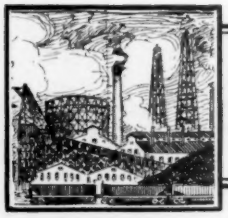


News of the Gas Industry

Sale of Gas Appliances Up

Gas appliance sales throughout the country registered a substantial increase during the first ten months of this year as compared to the same period in 1938 with sales in October, 1939, greatly exceeding those of October of last year, it has been reported by C. W. Berghorn, managing director of the Association of Gas Appliance and Equipment Manufacturers from the Association's national headquarters in New York.

An increase of 44.9 per cent in gas house heating equipment sales has been noted during the first ten months of 1939 as compared to the same 1938 period. October, 1939 sales of gas house heating equipment were 59.5 per cent higher than October of last year.

While sales of gas water heaters increased 28.6 per cent for the ten-month period of 1939 as compared to last year's similar period, October, 1939 figures for this appliance category show a rise of 40.6 per cent as compared to October, 1938.

Domestic gas range sales increased 31.6 per cent for the ten-month period and registered a rise of 25.6 per cent during October, 1939 as compared to the same 1938 month.

Pacific Coast Branch Testing Laboratories Move To New Building

On November 25th, 1939, testing operations were begun at the new Pacific Coast Branch Testing Laboratories building at 1425 Grande Vista Avenue, Los Angeles, California. Announcements to this effect were distributed to all gas equipment manufacturers and other interested parties early in November.

The changeover from the old to new quarters was accomplished in three days. Full advantage was taken of the Thanksgiving holiday and all testing equipment and office furniture as well as appliances undergoing test were moved with minimum interruption in regular testing activities.

During the last few years, the former rented laboratories building had become inadequate to handle the considerable increase in the number of appliances submitted for test and approval. The new building will provide over three times as much room for testing as the old building and will also assure ample facilities to handle the anticipated expansion of local industries for some time. Adjacent to the building is a 10,000 square yard lot which will provide parking space for visiting manufacturers as well as for any future expansion of the new building.

Southern Natural Builds New Mississippi Line

Southern Natural Gas Company, Birmingham, Alabama, has completed construction of a new 32-mile, natural-gas loop line for their compressor station at Onward, Mississippi, to a point due south of Yazoo City, Mississippi. Diameter is 18 in. OD. This new addition will provide additional service facilities through swampy terrain and will provide more gas at Yazoo City, where the load is increasing rapidly. Work was started in the latter part of October. National Tube pipe was used, joined at regular intervals with approximately 1,350 Dresser couplings. Maximum working pressure is expected to be 425 psi. On completion, the line was head-end tested at this pressure and not one leak was developed.

CONVENTION CALENDAR

February

12–14 *Southern Gas Association.* Annual Convention, Hotel Arlington, Hot Springs, Ark.

March

14–15 *New England Gas Association.* Annual Convention, Hotel Statler, Boston.

April

16–18 *Southwestern Gas Measurement Short Course.* College of Engineering, University of Oklahoma, Norman, Okla.

17–19 *Missouri Association of Public Utilities.* Annual Convention, Elms Hotel, Excelsior Springs, Mo.

July

3–5 *Canadian Gas Association.* Annual Convention, Jasper Park Lodge, Alberta, Canada. Northwest Conference of Pacific Gas Association will hold joint sessions.

Panhandle Eastern Awards Orders for New Pipe Line

In connection with its $3,500,000 construction program recently announced, the Panhandle Eastern Pipe Line Company has awarded orders for 25,000 tons of 24-inch and 22-inch pipe, according to announcement made recently by J. D. Creveling, president of Panhandle Eastern.

Contracts call for the construction of 136 miles of pipe line, looping that portion of their system east of Liberal, Kan., Greenburg, Kan., Haven, Kan., Olpe, Kan., Louisburg, Kan., Houstonia, Mo., Centralia, Mo., Pleasant Hill, Ill., and Glenarm, Ill. T. R. Jones of Dallas, Texas, was given the contract for four loops west of Louisburg, Kan.; I. C. Little received five eastern loops. Contractors have until July, 1940, to complete their work.

Pipe was divided between A. O. Smith Corporation of Milwaukee and National Tube Company of Pittsburgh, and is to be joined with approximately 9,200 Dresser joints. The Barrett Company and Wailes Dove-Hermiston coatings are being used. Working pressure is 500 psi.

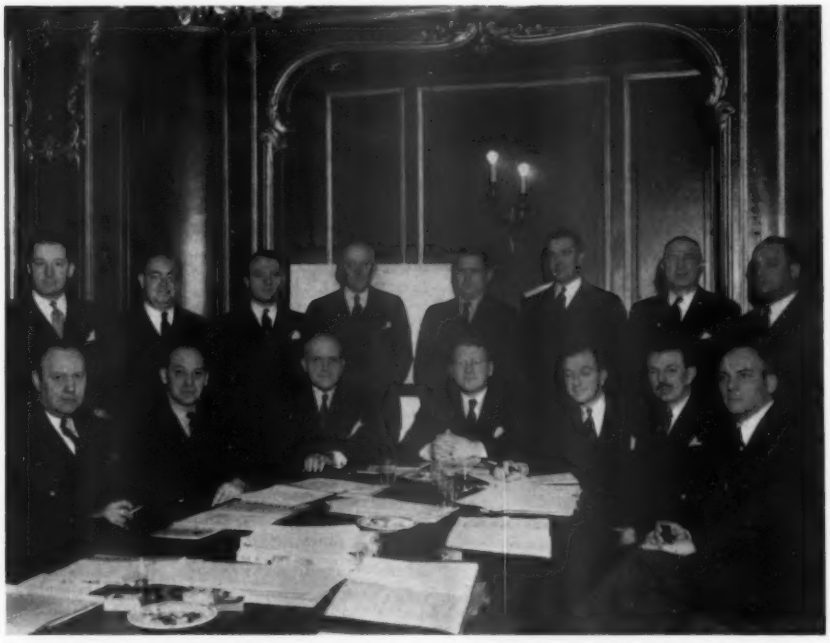
In addition to this new looping work, Panhandle Eastern is spending approximately $3,500,000.00 for new compressor-station equipment. The company's combination gasoline dehydration plant at Liberal is also to be enlarged.

New Consultants on Air Conditioning and Refrigeration

E. P. Heckel, who has for many years been identified with general air conditioning, refrigeration and industrial process engineering work, has announced that he now has offices and engineering staff in association with Samuel R. Lewis, 407 South Dearborn Street, Chicago, Ill.

Mr. Heckel's New York City associate is Harry Boyd Matzen, 185 Madison Avenue. The consulting business will be conducted in the name of E. P. Heckel & Associates and will be devoted primarily to air conditioning and refrigeration in all its phases; as applied to industrial processes as well as comfort.

Pacific Coast Branch A.G.A. Testing Laboratories



1939 A.G.A. Refrigeration Committee meeting at Chicago, December 5. Seated (left to right): G. H. Schlatter, General Sales Manager, Laclede Gas Light Co., St. Louis; H. D. Valentine, Sales Promotion Manager, People's Gas Light and Coke Co., Chicago; Louis Ruthenburg, President, Servel, Inc., Evansville; Bernard T. Franck (Chairman) Vice-President Milwaukee (Wis.) Gas Light Co.; John W. West, Jr. Secretary, American Gas Association, New York City; J. L. Johnson, Sales Manager, Providence (R. I.) Gas Company; H. R. Carlson, Sales Manager, Hartford (Conn.) Gas Company.

Back row (left to right): C. S. Stackpole, Asst. Merchandise Manager, Consolidated Gas Electric Light and Power Co., Baltimore; H. S. Boyle, Servel, Inc., Evansville; W. Stanley Redpath, Sales Promotion Manager, Equitable Gas Co., Pittsburgh, Pa.; R. A. Gordon representing A. J. Maloney, Washington (D.C.) Gas Light Co.; H. R. Cloud, Vice-President and General Manager, Florida Public Service Co., Orlanda, Fla.; O. J. Haagen, Appliance Sales Manager, Ohio Fuel Gas Co., Columbus, Ohio: H. C. Porter, New Business Manager, Kansas City (Mo.) Gas Co.; C. A. Nash, Sales Promotion Manager, United Light and Power Service Co., Davenport, Ia.

Government Inspection of Gas Meters in Canada

From Annual Report of Directors of Consumers Gas Co. of Toronto presented by Edward J. Tucker, General Manager.

The Dominion Government provides an inspection service, under which every new gas meter is inspected for accuracy before it can be placed in service, and must be removed from service and re-inspected every six years.

"Some of you may have noticed an advertisement sponsored by the Department of Trade and Commerce, which appeared recently in the newspapers and in some magazines and trade papers.

"The advertisement was designed to inform the public of the Government Inspection Service and stated that Canada was the first country in the world to adopt this protective policy.

"Every gas meter in use bears a Government seal which signifies that the meter has been inspected and found correct. The seal also prevents the meter from being tampered with.

"You will gain some indication of the accuracy of gas meters from the records of the tests of 8,766 meters which were tested by the Company on being brought into the meter shop after having been in service from 1 to 5 years. These tests showed that the average error of the group was (0.07%) seven one-hundredths of one per cent slow—that is, in favor of the customers.

"Does your watch perform as accurately?

"Special precautions are taken by the Company to keep its meters in good condition, and for this purpose the Company maintains a well equipped modern meter repair shop and testing rooms where all repair work and testing of meters is carried out by a force of 49 men. Last year 48,294 meters were passed through our shop for inspection or repair."

Penna. Natural Gas Men's Assn.

The December dinner meeting of Pennsylvania Natural Gas Men's Association was held on December 19 at the Pittsburgh Athletic Association.

Mr. Ellis H. Phillips, General Manager of the American Glycerin Division of Du-Pont de Nemours Company, located at Bradford, Pennsylvania, spoke on Developments in Shooting Gas Wells.

At a subsequent meeting on January 19th, 1940, the Federal Wage and Hour Law, and its application to the natural gas industry will be discussed by one of the attorneys engaged in the enforcement of this law.

Brooklyn Union Refrigerator Sales Exceed 21,000 in 1939

Brooklyn Union went over the top on Dec. 14th when the 21,000th gas refrigerator was delivered. This mark of 21,000 sold and delivered gas refrigerators has been the goal aimed for in this company's "Ring-a-Million-Doorbells" campaign. This ambitious achievement will stand out not only as a record-breaking accomplishment for Brooklyn Union but also as the greatest total of gas refrigerators sold by any company in America this year.

"The New Business Department thoroughly appreciates the help it has received throughout the year—and especially during the present campaign—from group leaders and lead-producing employees," said Walter E. Bolte, New Business Manager, in commenting upon Brooklyn Union going over the top in its gas refrigeration drive.

"Such an ambitious campaign would never have been attempted," he added "had we not known the superior manner in which the Brooklyn Union organization cooperates. We realized that leads would be forthcoming since this company's employees surpass all other organizations in this respect and since we knew real encouragement would be provided by our 'sales assistance managers.'

"That such an enviable sales accomplishment has been recorded is due to the cooperative efforts of our excellent organization—alert employees, enthusiastic 'sales assistance managers', intelligent salesmen and superior dealers. Because of this teamwork we know we will top the country in gas refrigeration sales in 1939."

St. Louis County, Missouri Shows Steady Increase in Gas Heated Homes

During the current year building activity in St. Louis County, Mo., has reached its highest peak,—1800 new homes having been built during the first nine months of the year.

Of the better homes built, gas has been the accepted fuel, as 83% of these have installed gas heating. At the end of September, no less than 5,382 families in this County enjoy the privilege and convenience of automotic gas heat.

The growth of house heating by gas in the County from 1923 to 1939 is shown by the following significant figures.

1923..... 28	1932.....1177
1924..... 42	1933.....1492
1925.....111	1934.....1944
1926.....194	1935.....2602
1927.....297	1936.....3514
1928.....444	1937.....4352
1929.....619	1938.....4875
1930.....716	1939.....5382
1931.....814	(to Sept. 30th)

More than 300,000 persons reside in St. Louis County—on vast estates, on small modern agricultural and horticultural plots, in attractive subdivisions and in thirty-eight incorporated towns and villages.

St. Louis County Gas Company may well be proud of their house heating progress.

Southeastern Regional Restaurant Convention

Gas in the Limelight

When the boys at Washington Gas Light Company set out to make the most of the annual three-day Regional Restaurant Convention jointly sponsored by the National and Washington Restaurant Associations in Washington, D. C., they really "put it on".

First off, the Washington Gas Light Company's 40-piece band greeted National Restaurant President McVittie and other incoming delegates when they stepped from the train at Silver Spring, Maryland, the day before the Convention opened on December 4. Then they placed two gas-industry speakers on the Convention program for Wednesday afternoon, the first being Al Pitman of J. C. Pitman & Sons, Inc., Lynn, Mass., who led a discussion on the care and maintenance of heavy-duty cooking appliances and what the restaurateur should know about deep fat frying. The second speaker, Frank H. Trembly, Jr., Assistant Sales Manager, The Philadelphia Gas Works Company, represented the Industrial Gas Section of the American Gas Association and spoke on "Producing Quality Food At a Profit". Said Trembly, "The restaurant customers, as a group, probably constitute the largest commercial class of gas users, all companies being considered; and no fuel as yet developed has equalled or even approached the combination of advantages that gas has to offer as a commercial cooking fuel. We realize that our dominant position, thus won through performance and economy, must be retained on the same principles". Mr. Trembly suggested that "The things your gas utility can help you to do so that you may produce quality food at a greater profit, include: (1) Replacing your old equipment with modern gas heavy-duty equipment which can save you much in fuel and pay for itself in less food shrinkage alone, (2) Installing the right appliances for the peculiar requirements of the establishment, and (3) Guard you against over-equipping with expensive and fuel-consuming apparatus not needed".

As for the Exposition associated with the Convention, the Washington Gas Light Company, in cooperation with various appliance manufacturers, sponsored and manned a 64-foot gas industry booth covering the whole entrance wall of the display hall in the Mayflower Hotel. Under suitable unifying decorations pronouncing the virtues of gas as a restaurant fuel, were included a double-heat-controlled four-deck Blodgett bake oven, several models of latest type Pitco deep fat fryers, lines of medium and heavy-duty range sections by American Stove Company, Detroit Michigan Stove Company, and Standard Gas Equipment Corporation, Humphrey heat towers, unit heaters and forced air space heaters, and the new Burkay continuous-flow water heater. One visitor commented, "The gas exhibit was quite the most impressive feature of the show."

Announces Development of a Clay Equal to German Vallendar Clay

The development of an enameling clay which is the equal if not the superior of Vallendar Clay has been announced by the Porcelain Enamel & Mfg. Company, Baltimore, Md. Though this new clay is mined in North America it is the equal of Vallendar Clay because it is manufactured by the Micronizer Process. In this process the unrefined clay enters a cylindrical chamber at a speed in excess of 700 miles per hour, causing the clay to bombard itself. This bombardment results in the explosion of the clay particles and their reduction to an average grain size of 3 microns. (3 microns = .00011811 of an inch.) The terrific speed of this process causes the impurities—iron, pyrites, wood, etc.—to be thrown out so that the result is a perfectly pure clay.

New Duties for Brendel

Manning, Maxwell & Moore, Inc., Bridgeport, Connecticut, makers of pressure gauges, safety valves, thermometers, and globe valves, announces the advancement of Louis H. Brendel. He will assist C. B. Butterfield, General Sales Manager, of this company. Mr. Brendel's new duties will include the supervision of sales promotion and jobber relations for the Ashcroft American Gauge Division, the Consolidated Safety Valve Division, the American Schaeffer & Budenberg Instrument Division, and the Hancock Valve Division.

Meter Reading Department Is Keeper of 122 Customer Keys

Visible evidence of the confidence which customers have in the meter readers of People's Gas Light & Coke Company, Chicago, is shown in the presence of a large cabinet in the Meter Reading Department which contains a large number of keys, given by customers to the Company's representatives, so that they can have their meters read once a month. These keys are used in cases where the customer is seldom home during the daytime. However, regardless of circumstances, the Company will not accept keys gaining admittance to living quarters. The keys are mostly for basements, sheds, church kitchens, vacant stores, front or rear halls, or boiler rooms.

In return for this customer-confidence, the Meter Reading Department maintains rigid precautionary measures to assure constant control over the keys, and to keep secret the location of the locks they fit. They are kept only in one cabinet, and all are identified by tags, each one containing a code number, which is wholly meaningless to anyone finding the key. Also on the tag is a printed message asking the finder to return it to the Gas Company.

The code number can only be deciphered by glancing through the meter reading route book. When a book for a particular district comes to the meter reading clerk, he looks in the book to see if any keys are registered in it. If so he takes the key from the cabinet, makes out a slip giving the location of the lock, and asks the reader to sign for the key before he leaves with it. On the next morning when he returns the key, the clerk tears off the signature from the slip and gives it to the meter reader as his receipt.

One customer has a slightly different method; he has installed a combination lock on his basement, and has given the Company the combination to give each month to the meter reader having that route. The Company owns one key which unlocks a large stepladder placed on the premises by the meter readers so that the otherwise inaccessible meter can be read regularly.

—*Gas News*

WARNING
Winter peaks ahead! G. P. M. in your purifiers means clean . . gas in the holder . .
GPM
GAS PURIFYING MATERIALS CO.
Long Island City, N. Y.

HOTEL CHELSEA
ATLANTIC CITY
RIGHT ON THE BOARDWALK
FROM $6 WITH MEALS & BATH
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Per Person 2 in a Room Less Weekly
Here you will find everything to further your comfort and enjoyment — outside ocean-view rooms . . . sun deck . . . beautiful dining room at the ocean's edge . . . superb cuisine . . . varied sports . . . and entertainment. You'll like your fellow guests . . . and the delightfully friendly atmosphere of The Chelsea
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WRITE FOR BOOKLET AND INFORMATION
JOEL HILLMAN · J. CHRISTIAN MYERS · JULIAN A. HILLMAN

American Gas Association Announces Plans for Gas Refrigeration Campaign

The American Gas Association has announced the officers and members of the Gas Refrigeration Committee and its plans for 1940 gas refrigeration sales campaign.

Plans for 1940 call for a continuous year-round selling campaign with over 600 utilities and many gas appliance dealers cooperating. The 1940 season has been divided into four quarters, the first beginning January 1. The general theme is "Life Begins in '40 for Gas Refrigeration."

The officers elected are Bernard T. Franck, Chairman; Louis Ruthenburg, Vice-Chairman; John W. West, Jr., Secretary, and R. J. Rutherford, Consulting Chairman, the retiring chairman of the committee.

"This year, in the first quarter campaign, we are concentrating on the replacement market," announced Mr. Franck. "Right now there is a potential of 2,600,000 automatic refrigerators that have been in service eight years or more.

"The replacement market is not seasonal," he continued, "we feel that the potential is a great incentive for a year-round selling campaign."

The campaign is being run with the utilities and their salesmen competing for liberal awards—trophies for the utilities, and cash awards for the appliance salesmen. These awards are given to the utilities and salesmen making the greatest number of sales in their respective divisions.

While winning salesmen will be reported monthly, the final winners, both salesmen and utilities, will be announced in October at the annual convention of the American Gas Association in Atlantic City.

Officers and members of the committee are: Bernard T. Franck, chairman of the committee, vice - president, Milwaukee (Wis.) Gas Light Co.; Louis Ruthenburg, vice-chairman of the committee, president, Servel, Inc., Evansville, Ind.; John W. West, Jr., secretary of the committee, American Gas Association, New York; R. J. Rutherford, consulting chairman of the committee, vice-president, Worcester (Mass.) Gas Light Co.

George Schlatter, general sales manager, Laclede Gas Light Co., St. Louis, Mo.; H. C. Porter, new business manager, Kansas City (Mo.) Gas Co.; H. W. Edmunds, new business manager, Coast Counties Gas Co., Santa Cruze, Calif.; H. R. Cloud, vice-president, Florida Public Service Co., Orlando, Fla.; H. D. Valentine, sales promotion manager, The Peoples Gas Light & Coke Co., Chicago; W. Stanley Redpath, Equitable Gas Co., Pittsburgh; A. J Maloney, general sales manager, Washington (D. C.) Gas Light Co.; E. E. Linburg, manager of gas division, Metropolitan Edison Co., Easton, Penna.; H. S. Christman, general sales manager, Philadelphia Gas Works Co.

H. R. Carlson, sales manager, Hartford (Conn.) Gas Co.; J. A. Samuels, supervisor, Consolidated Edison Co. of New York, New York; H. Vinton Potter, merchandise sales manager, Oklahoma Natural Gas Co., Tulsa, Okla..; J. L. Johnson, sales manager, Providence (R. I.) Gas Co.; C. S. Stackpole, assistant merchandise manager, Consolidated Gas Electric Light & Power Co., Baltimore, Md.; W. C. Wolff, domestic sales manager, The Brooklyn Union Gas Co.; O. J. Haagen, appliance sales manager, Ohio Fuel Gas Co., Columbus, Ohio; C. A. Nash, sales promotion manager, United Light & Power Service Co., Davenport, Iowa.

1939 Cited as Successful Year for Gas Industry

Reporting Increase in Appliance Sales, Association Head Credits National Promotion

The year 1939 has been a banner year for the gas industry, with gas appliance sales throughout the United States registering substantial increases over those of the previous year, Frank H. Adams, president of the Association of Gas Appliance and Equipment Manufacturers, reported in a year-end statement. He attributed the rise to extended national promotion, increased advertising, constant improvement of product, and "consciousness" of consumer trends.

Mr. Adams said that the following increases in the sales of major gas appliance lines will be noted for 1939 as compared with 1938: house heating equipment, 45.0 per cent; gas ranges, 32.0 per cent; gas water heaters, 30.0 per cent, and gas refrigerators, 30.0 per cent. He estimated that shipments of gas ranges alone for the year 1939 will approach 1,350,000 units which is considerably in excess of 1938 sales.

The Association's president credited the several extensive sales promotion campaigns which the Association's product divisions have conducted during 1939 as major contributing factors to the year's favorable outlook. The "CP" Gas Range program and similar sales promotional endeavors in behalf of gas water heaters and gas refrigerators were among those he referred to.

Mr. Adams said: "On the crest of a rising domestic market, a considerable portion of which is for the replacement of much obsolete equipment in the homes of the nation, and in new building developments, the gas industry in general and the gas appliance industry in particular has enjoyed a successful year.

"Great co-operative effort between manufacturers has resulted within a very limited period, in focussing considerable attention on the part of the consumer public on the advantages of modern gas appliances. This is evident by the sales increases noted. Jointly, manufacturers have projected national sales campaigns during 1939 the effectiveness of which is unquestioned. Next year, we will extend and double our promotional efforts."

INDUSTRIAL GAS BOILERS
GARMENT PRESS BOILERS
100 lbs. ASME Code
¾ to 45 H.P.

P. M. LATTNER MFG. CO.
MAIN OFFICE
CEDAR RAPIDS, IOWA

New Division Manager for Worthington

The appointment of Mr. Harold W. Stoddart to the position of Manager of its Turbine Well Pump Division has been announced by Worthington Pump and Machinery Corporation, Harrison, New Jersey.

Mr. Stoddart graduated at Iowa State College in 1919, and joined the Worthington organization at that time. He has been closely allied with the manufacture of turbine well pumps since 1921. From 1932 to 1935 he served as Engineer in Charge of turbine well pumps, overseeing the design and manufacture of the product. In 1935 he was appointed special representative in charge of turbine well pump sales, in which position he was responsible for the sale of turbine well pumps throughout the entire Worthington sales organization. Since the early part of 1939, he has served in the capacity of Assistant Manager of the Turbine Well Pump Division.

"Pat" Miller With Perfex

That L. B. (Pat) Miller has joined its Automatic Control Division in a sales executive capacity is announced by the Perfex Corporation, Milwaukee, Wis.

He is one of the pioneers of the control industry. With E. N. McDonnell, he founded the firm of McDonnell & Miller, manufacturers of low water cut-offs, in 1924. When he sold his interest to Mr. McDonnell in 1929, he joined the Time-O-Stat Controls Company of Elkhart, Indiana, as assistant sales manager. This company was purchased by the Minneapolis-Honeywell Regulator Company in 1931, and "Pat" took charge of the Refrigeration Control Division of that concern. In 1932 he initiated the activity of Minneapolis-Honeywell in the air conditioning field, and for the next five years was prominently identified in this phase of the control business. He then introduced the Polatron System of Refrigeration Control, and managed this activity until his resignation in June of this year.

Obituary

Henry L. Doherty Is Dead at 69; Head of Cities Service Company

Henry L. Doherty, public utilities operator and president of the Cities Service Company, died of bronchial pneumonia at Temple University Hospital, Philadelphia, Pa., Dec. 26. Mr. Doherty had been ill since 1927 and had been a patient at Temple University Hospital intermittently since June, 1931. He was sixty-nine years old.

Mr. Doherty was born in Columbus, Ohio, on May 15, 1870. His father, Frank Doherty, was an inventor and engineer, thus setting the pace for his son. The first of that Doherty family to come to this country was William, who arrived here from Ireland in 1800 and became an adjutant general of Ohio. Mr. Doherty's mother before her marriage was Anna McIlvaine, whose father once was state librarian of Ohio, brevetted for bravery during the War of 1812.

Such glories, however, were of the past, for when Henry Doherty was only ten years old he found it necessary to earn his pocket money by selling newspapers. Two years later he quit school without telling his mother and got a job as office boy with the Columbus Gas Co. Although his library was one of his joys in later years, Mr. Doherty always prided himself on having received almost no formal education.

By 1896, Mr. Doherty had been promoted by the firm in his home town to chief engineer and assistant to the manager and in that year he went to Madison, Wis., where he became manager of the Madison Gas and Electric Company. He stayed there long enough to be made president of the firm and then returned home to become engineer for the Columbus Electric Company.

Then, in rapid succession, he was general manager of the St. Paul (Minn.) Gas Light Co. and of the St. Paul Edison Co., constructing engineer of the Jacques Cartier Electric Co., in Quebec; chief engineer of Emerson McMillian & Co., in New York; manager of the American Light & Traction Co. and president of the Denver Gas & Electric Co.

Mr. Doherty was only thirty-five years old when he left the Rocky Mountains and came to New York to fight with the best of them for a place in the rising industrial sun. No one in the financial district was particularly impressed when, in 1905, the young man from Columbus, via Denver, rented the smallest office he could find in 60 Wall Street and started the firm of Henry L. Doherty & Co. Nineteen years later he bought the twenty-six story building at 60 Wall Street for more than $2,500,000.

The point, which many missed at the time, was that Mr. Doherty, despite his youth, had a firm grasp not only on the financing of a public utility but on the details of organization, manufacture and invention. He was the first to advocate the abolition of purifying houses in gas works and to place the purifiers outdoors—a practice which later was followed generally throughout the industry.

HENRY L. DOHERTY

Even before he left the Columbus Gas Co., Mr. Doherty had done pioneer work in introducing the Welsbach lamp. Although he didn't bother to patent many of his discoveries, his inventive bent had improved gas meters, gas benches, scrubbing and condensing apparatus, methods of charging for gas and electricity, and the displacement gas calorimeter. In his spare moments he had invented appliances for handling, washing, drying and cleaning glassware and brass, a carrying device for glass chimneys, and gadgets facilitating distant control of lamps used on signs, show windows and theaters.

Mr. Doherty, too, is generally credited with being the first operator of gas and electric corporations to introduce modern commercial methods of advancing the industry. He started a systematic advertising campaign in the newspapers designed to present his concerns to the public as personal, human outfits.

Mr. Doherty thought up the idea of organizing a Housekeepers' League to familiarize women with the advantages afforded by his products. People laughed when he first suggested teaching gas cooking in the public schools but later such classes were instituted with all due gravity and ceremony. He devised the slogan used for so many years: "Cook With Gas."

In 1933 he won the Beall Gold Medal for a paper on "Gas for Fuel." A few years later he was active in the organization of the Inventors' Guild to facilitate the profitable dissemination of new discoveries.

The Franklin Institute gave Mr. Doherty its Walton Clark gold medal in 1930 for his "outstanding work in development of the manufactured gas industry." Lehigh University conferred an honorary engineering degree upon him the following year and an honorary degree of Doctor of Laws in 1937.

During the war Mr. Doherty severed his connections with business for the first and only voluntary time and went to Washington, where he did research work for the Army and invented an electrolytic bomb.

Mr. Doherty came from the West to Wall Street to develop his complicated and highly lucrative network of public utilities and petroleum companies. He grew a beard to impress the staid bankers of the East, but they would have little to do with the upstart. So Mr. Doherty borrowed abroad and the firm of Henry L. Doherty & Co. prospered. A few years later he set up his famous Cities Service Company, a super, de luxe holding concern which in time embraced 190 public utilities and oil properties.

As early as 1897 Mr. Doherty joined the National Electric Light Association at a time when it was decidedly lacking in influence and character. Under his aegis the organization launched an aggressive campaign against certain phases of competition in the electrical industry with the result that, despite the squawks of the conservative elders, it ceased to be an ordinary society and became a truly national organization. The American Gas Institute enjoyed a similar boost as a result of Mr. Doherty's efforts.

He was also very active in the affairs of the American Gas Association from its organization in 1918 and was a director at the time of his death.

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On April 18, 1929, Mr. Doherty's offices issued a brief announcement to the effect that the chief had been married the preceding Dec. 31 to Mrs. Percy Frank Eames, widow of an official in the foreign service of the International Harvester Company, who died in Paris in 1920.

JAMES J. NORTON

James J. Norton, senior assistant in the Tax Department of Consolidated Edison Company of New York, died at his home on December 11th, following an operation. He was also secretary of the Tarrytown Terminal Corporation, a subsidiary of the Consolidated Edison System.

Mr. Norton joined the company as an office boy in 1895 and would have completed forty-five years of service on February 18, 1940. During practically all of his business career he was concerned with the accounting and auditing aspects of the utility business. He was a member of the American Gas Association and a charter member of the Gas Accounting Society which later became the Society of Gas and Electrical Accountants.

Addison B. Day

ADDISON B. DAY

Addison B. Day, formerly Chairman of the Board of Southern California Gas Company, died on November 28th after a long illness, having long been prominent in the gas industry.

He was a past-president of the Pacific Coast Gas Association and had served many times on its Board of Directors and that of the American Gas Association. He was the donor of the highest award conferred by the P.C.G.A.—the Addison B. Day Medal of Honor. Mr. Day had retired from the Chairmanship of the Southern California Gas Company on September 1st.

Mr. Day's business career began in the ranks of Los Angeles Lighting Company 1895, and terminated within the successor organization, Southern California Gas Company, upon his death, thus embracing a span of 44 years.

In 1932 he was named by the Los Angeles Realty Board as "the most outstanding citizen of Los Angeles," and received the service watch award of that body.

Companies Under the Direction of Colonel W. F. Rockwell Report Profitable Year

With the announcement of an extra dividend by the Standard Steel Spring Company, approximately $5,000,000 has been paid during 1939 to the stockholders of three companies operated under the direction of Colonel W. F. Rockwell, President of Pittsburgh Equitable Meter Company, Pittsburgh, Pa., and Chairman of the Board of the spring company. Employment in plants scattered throughout the country has reached a peak of close to 8,000 men.

According to Colonel Rockwell, these profitable results can be ascribed largely to a consistent program of scientific research and development. His faith in research is predicated upon his own successful efforts in engineering and designing. Educated in Boston at the Massachusetts Institute of Technology, Colonel Rockwell has been actively engaged in consulting and development engineering since 1914. It is, therefore, only natural that with such a background of productive research and inventive ability, the companies under his supervision are embarked on the most ambitious programs of scientific development that they have ever undertaken.

In addition to company operated laboratories, in which over one hundred engineers are constantly employed, Fellowships are maintained at the world renowned Mellon Institute where particularly involved problems requiring continuous research are handled.

Colonel Rockwell has found that the results from pure research on a specific problem may lead to additional applications in other fields and have been known to open entire new industries.

One of the outstanding developments in the past year is Corronite which is a metallic pore-free coating, offering exceptional advantages in corrosion resistance. Extraordinary thin coatings produced by the Corronizing process have been found to give extremely effective protection against corrosion of the most severe type. The bond of the Corronite to the steel is so firm and the ductility of the coating so high that bending or forming does not impair the protective value of the coating.

Another development is a series of plastic metallic lubricants for use at very high temperatures and pressures. These lubricants have many applications in industry and promise results in the creation of an entirely new industry.

The Luxaire Heating and Air Conditioning Plant at Elyria, Ohio

The remodeling and renovating of The C. A. Olsen Manufacturing plant at Elyria, Ohio, the new home of Luxaire heating and air conditioning units, which was formerly occupied by The American Rolling Mills Company, is rapidly nearing completion. Large crews of workmen and mechanics have spared no time nor effort in bringing the job to completion. Railroad sidings from the main lines of the New York Central and Baltimore & Ohio railroads have been repaired and are ready for use, along with ample loading facilities for motor trucking.

Thomas Adland, for many years a superintendent for the Lennox Furnace Company, has been engaged as Superintendent. Mr. Adland's experience in plant management and general knowledge of the manufacture of residential heating equipment are being utilized in the general layout and installation of machinery.

Mr. C. A. Olsen announces that the plant will be in operation this month with a complete line of heating and air conditioning units for gas, oil and coal. Blower units will also be manufactured. Mr. Olsen extends an invitation to all those interested to visit one of the heating industry's most modern manufacturing plants at Elyria.

Catalogs

Meters for Steam, Liquids and Gas, a 47-page illustrated bulletin 200-4, covering the use of flow meters wherever air or gas, liquid or steam is produced and distributed, has just been published by the Foxboro Company, Foxboro, Mass. The booklet contains an interesting discussion of flow problems encountered in various industries and methods of approach to these problems.

Construction details contained in the booklet include a diagrammatic representation of the operation of the segmental lever and float, and information concerning automatic check valves, pressure-tight bearings, damping plugs, static pressure movements and electric and spring-wound clocks.

A section devoted to meter accessories is illustrated with charts of uniform flow scale, uniform differential scale and square root scale. Other accessories mentioned are orifice plates, flanges and vanes. Standard ranges are shown, and useful data is given on piping layouts and meter mountings.

Research Instruments. A 66-page, condensed catalog, just issued, lists the entire Leeds & Northrup line of instruments for research and for routine testing in laboratory, plant and field... Standards, Galvanometers and Dynamometers, Bridges, Potentiometers, Photometric Apparatus, Miscellaneous Apparatus, Primary Elements, Accessories, Supplies, Instrument Parts. Every standard L. & N. item is briefly described and most of the principal ones illustrated. A copy will be sent to anyone who asks Leeds & Northrup Company, 4934 Stenton Avenue, Philadelphia, for Catalog E.

Industrial Heating. Lava gas tips and burners for industrial heating as well as pilot and other tips for lighting and heating purposes are completely described in a fully illustrated Catalog (No. 31) of American Lava Corporation, Chattanooga, Tenn.

Diagrams of application of lava tip burners to various types of furnaces and capacity charts for manufactured and natural gas are included as well as illustrations of many types of tips. Attention is directed to the composition of the "lava" which is in reality the mineral steatite, burned at a temperature of about 2000° F. and having a compressive strength of from 20,000 to 30,000 pounds per square inch.

Joint Sealing Compound. A bulletin just issued by Macksons Company of 125 Cedar Street, New York, calls attention to "Seal-Rite" joint sealing compounds for piping and industrial equipment. Two types are described. No. 5 for pipe lines and equipment carrying high pressure steam, gases, oil, gasoline, grease, and solvents. No. 10 for hot and cold water, low pressure steam, compressed air, alcohol and brine.

Gas Engines. Worthington bulletin S-550 illustrates and describes in detail type EEG, gas engines of the vertical four cycle type. Several notable installations are shown and individual parts discussed and shown in detail. For copy address Worthington Pump and Machinery Corporation, Harrison, N. J.

Handling Equipment. Bulletin 109 of Robins Conveying Belt Co. covers various types of equipment for conveying materials including belt conveyors, screens, bucket conveyors, crushers, skip hoists etc. Copy on request. Address 15 Park Row, New York.

PARTNERS IN PROGRESS for more than a century, the gas industry and cast iron pressure pipe makers have steadily improved methods and materials in gas distribution. With higher pressures came the modern bottle-tight mechanical joint. All mechanical joints made by CIPRA members are identical in principle though differing in design—and *all* are *bottle-tight*.

Look for the "Q-Check" registered trade mark. Cast iron pipe is made in diameters from 3" to 84 inches.

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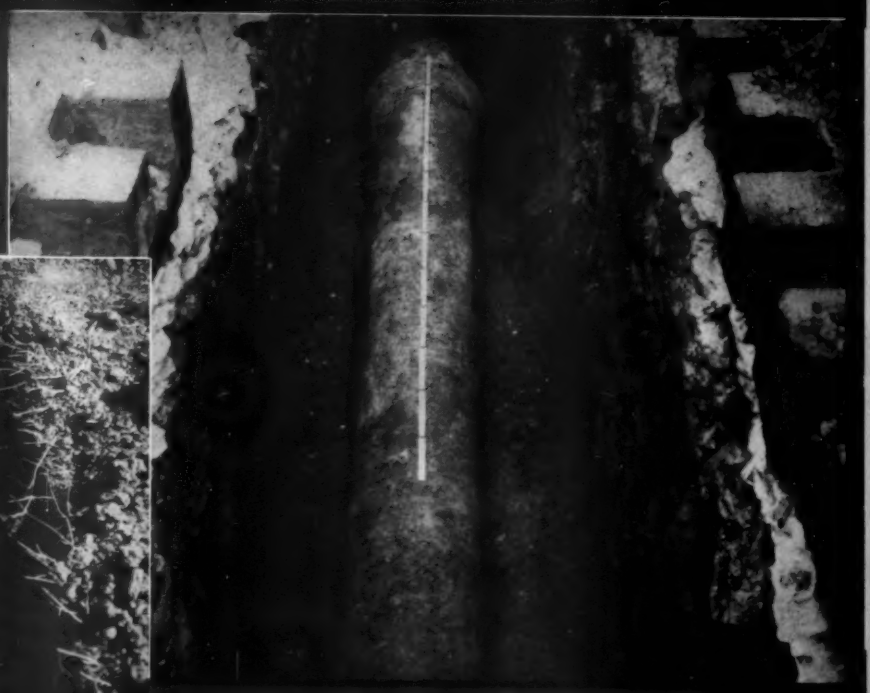
THE STANDARD MATERIAL FOR UNDERGROUND MAINS

One man, one tool and elbow-room in the trench are all that's required to install the modern gas-tight mechanical joint.



Here is an unretouched photo of a cast iron distribution main installed in Philadelphia more than a century ago—recently uncovered, inspected and approved for further indefinite service.

SIMPLICITY OF CONSTRUCTION

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